

MYSTIC CHORD HARMONIC AND LIGHT TRANSFORMATIONS IN

ALEXANDER SCRIABIN'S *PROMETHEUS*

by

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## THESIS ABSTRACT

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Title: Mystic Chord Harmonic and Light Transformations in Alexander Scriabin's *Prometheus*

This thesis seeks to explore the voice leading parsimony, bass motion, and chromatic extensions present in Alexander Scriabin's *Prometheus*. Voice leading will be explored using Neo-Riemannian type transformations followed by network diagrams to track the mystic chord movement throughout the symphony. Bass motion and chromatic extensions are explored by expanding the current notion of how the *luce* voices function in outlining and dictating the harmonic motion. Syneathesia will also be examined as a composition device used to create the light, harmony, and drama of *Prometheus*.

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## CHAPTER I

### INTRODUCTION

In 1901, while staying in Brussels, Belgium, Alexander Nikolayevich Scriabin (1871-1915) in 1909 commenced writing his fifth symphony – a symphony that would become his legacy. Scriabin finished the fifth symphony, titled *Prometheus: Poem of Fire*, in Moscow, Russia in 1910. *Prometheus* received its first public hearing on March 2, 1911 in Moscow under the baton of Sergius Kussewitzsky with Scriabin himself at the piano.<sup>1</sup>

*Prometheus* is an enormous composition calling for an oversized orchestra with a large battery of auxiliary instruments (i.e. piano, organ, mixed chorus, light organ, harps, etc.). A large orchestra was nothing new in 1911; however, the harmonic language that Scriabin uses in the symphony is revolutionary. The so-called mystic chord or set class 6-34 is the harmonic support for the entire symphony. Because the piece develops its own harmonic language, based on the mystic chord, and does not follow the long-standing major/minor harmonic system, many listeners found the composition to be unintelligible. In fact, when the piece premiered in London (January 2, 1913), the symphony was played twice “with the idea that a second hearing would make the work more easily intelligible.”<sup>2</sup> The reviews of the symphony fell into two distinct camps that “either condemned the work whole-heartedly or else confessed themselves mystified.”<sup>3</sup>

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<sup>1</sup> Eaglefield A. Hull, *A Great Russian Tone-Poet: Scriabin*. London: Kegan Paul, Trench, Trubner and Co., LTD., 1927.

<sup>2</sup> Hull, *A Great Russian Tone-Poet: Scriabin*, 61.

<sup>3</sup> *Ibid.*, 61.

Rosa Newmarch, who wrote the program notes for the London debut of *Prometheus*, gives the first account of the melodic, harmonic, and symbolist content. She describes the mystic chord as being derived from the harmonic series and establishes it as the basic harmonic unit. Newmarch also describes the mystic chord as “the chord of the ninth with the augmented fifth.”<sup>4</sup> After establishing the basic harmonic unit of the composition, Newmarch describes the role of the piano, which is to “personify the Microcosm [of] man in contrast to the Macrocosm of the Cosmic Idea, represented by the orchestra.”<sup>5</sup> The remaining portion of the article is devoted to correlating the melodic content with the symbolist narrative that this piece embodies. For example, Newmarch describes the dance melody in mm. 47-50 as the commencement of the awaking process where the human race, initially formless, begins to gain embodiment and shape.<sup>6</sup> In Newmarch’s notes, she states that the “design of ‘Prometheus’ approximates to sonata-form,” which Josef-Horst Lederer and James Baker delineate in their research.<sup>7</sup>

Lederer explains that the light has its own form and the music has its own form.<sup>8</sup> The music follows a standard sonata form, which includes a coda; however, Lederer noticed that the musical sonata form does not coincide with the three sections of the light symphony. Lederer concludes that the color sections are divided by the golden mean and

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<sup>4</sup> Rosa Newmarch, “‘Prometheus’: The Poem of Fire.” *The Musical Times* 55, no. 854 (1914): 230.

<sup>5</sup> *Ibid.*, 230.

<sup>6</sup> *Ibid.*, 230.

<sup>7</sup> *Ibid.*, 203.

<sup>8</sup> Horst-Lederer, Josef. "Die Funktion der Luce-Stimme in Skrjabins op. 60." In *Alexander Skrjabin*, edited by Otto Kolleritsch, 128-141. Graz: Universal Edition, 1980.

that each of the sonata form's sections comprises one-third of the composition.<sup>9</sup> Because of the lack of sectional constancy between the light and music, Lederer suggests that the two act as counterpoints with one another instead of an indissoluble artistic whole. Baker also describes the symphony's form as sonata and supports his sonata form reading with melodic and bass motion specifics.<sup>10</sup> Baker develops a highly detailed motivic analysis, which he uses to inform and reinforce his sonata form sectional delineations. Baker's analysis of the background bass motion also suggests sonata form; wherein the exposition establishes I, the development moves to IV and prepares the dominant, the dominant appears in the recapitulation and the coda closes in the tonic.<sup>11</sup>

If the harmonic language in and of itself is not revolutionary enough for the listener, then consider the role that light plays in this symphony. Scriabin wrote a part for a light organ, an instrument that had not been invented yet, that helped to tell the symbolist story of *Prometheus*. Scriabin imagined this symphony to be a symphony of both light and sound in much the same way people with synesthesia experience music. Synesthesia is a cross-modal experience where a listener sees color in response to sound stimuli. Scriabin goes to great lengths to lock together the light organ part and the harmonic background support of this composition.

The combination of light and music was so profound that after the March 20, 1915 performance at Carnegie Hall in New York City, the *New York Times* ran an article

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<sup>9</sup> Ibid.

<sup>10</sup> Baker, James. *The Music of Alexander Scriabin*. New Haven: Yale University Press, 1986.

<sup>11</sup> Ibid. Baker's bass motion analysis will be discussed in depth in Chapter III.

entitled, "'Color Music' Tried Here for First Time."<sup>12</sup> The article focuses on the workings of the newly designed light organ and the difficulty in interpreting Scriabin's light and music associations. Danuta Mirka explains the association between light and music in her 1996 article.<sup>13</sup> Here she describes that the light organ part (*luce*) is divided into two voices, a slow and a fast moving voice. The fast voice is devoted to outlining the root of the mystic chord being voiced by the orchestra and the slower voice (acting as pedal points) outlines the esoteric meaning of the symphony.<sup>14</sup> Mirka explains how each of these pedal points is related to theosophical doctrine and the esoteric meaning of the composition. Anna Gawboy expands on the esoteric meaning of the symphony in her recent dissertation; wherein she summarizes Scriabin's "metaphysical source texts" and shows how these texts inform Scriabin's composition of the symphony and how these texts can inform analytical interpretations of the symphony.<sup>15</sup> Gawboy also shows how the light colors are related and derived from these important source texts and aid in understanding not only the esoteric meaning of the composition, but also the musical structure of *Prometheus*.

This thesis seeks to understand why one group was "mystified" by this symphony and to suggest how we might be "de-mystified." I will examine the relationships between the mystic chords (the basic harmonic support), the significance of bass motion,

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<sup>12</sup> "'Color Music' Tried Here for First Time." *The New York Times*. March 28, 1915.

<sup>13</sup> Mirka, Danuta. "Colors of a Mystic Fire: Light and Sound in Scriabin's *Prometheus*." *The American Journal of Semiotics* 13, no. 1-4 (1996): 227-248.

<sup>14</sup> Ibid.

<sup>15</sup> Anna Gawboy, "Alexander Scriabin's *Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60*." PhD diss., -Yale University, 2010, i.

how chromatic extensions are used in this mystic chord harmonic system, and how light and sound come together to create a new compositional device in *Prometheus*.

### **Transformational Theory**

In various transpositions, the mystic chord acts as the basic harmonic content of this symphony. Through transformations of the mystic chord, Scriabin creates a seamless background sound. The relationships between mystic chord transformations can be examined by considering voice-leading patterns and Neo-Riemannian type relations. Clifton Callender examines voice leading parsimony in Scriabin's music. Callender's theory seeks to show transformations between pitch class sets of different sizes, primarily between six, seven and eight note sets. Callender's transformational ideas are also helpful in examining relations between pitch class sets of the same size; therefore, his transformational theory is helpful in understanding the relations between two transpositions of the mystic chord.<sup>16</sup> The specific transformations Callender describes will be discussed in depth in Chapter II. In Callender's article only brief musical examples were used to illustrate his transformational theory, this thesis will give a full deployment of this theory, adding a transformation process I designed. Employing Clifton Callender's transformational procedures<sup>17</sup> will help me to devise my own system for Scriabin's music that will track the voice leading patterns throughout the composition. Secondly, network diagrams can be built to show graphical interpretations of the voice leading patterns.

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<sup>16</sup> Clifton Callender, "Voice-Leading Parsimony in the Music of Alexander Scriabin." *Journal of Music Theory* 42, no. 2 (1998): 219-233.

<sup>17</sup> Ibid.

## **Bass Motion**

With Callender's transformational theory, one can examine the voice-leading that occurs between transformations of the mystic chord; however, this is not the final piece of the puzzle in understanding the role of the mystic chord. Because Scriabin treats set class 6-34 as a chord, one must consider the role that inversion plays. Is Scriabin utilizing techniques similar to tonal music to dictate bass motion or is he abandoning past rules to establish his own? Through analysis of *Prometheus* and its piano miniature, *Feuillet d'album*, op. 58 one can arrive at the conclusion that in fact both tonal-like techniques and Scriabin's own techniques are utilized in this symphony. Chapter III will highlight these techniques by showing how the bass motion is similar and unsimilar to typical tonal bass motion.

## **Chromatic Extensions**

Relationships between mystic chords and the bass motions that accompany them are not the end of the harmonic content of this symphony. Even with the mass orchestra and a unique mystic hexachord, a composition built on the transposition of only six tones would become very tedious; therefore, other "nonharmonic" tones must be included to bring variety to the composition. Scriabin accomplishes this task in two ways; by adding the traditional nonharmonic tones (i.e. passing tones, neighbor tones, etc.) and by chromatically extending the mystic chord in a specific method. Chapter IV will describe this method for chromatic extensions of the mystic chord.

## **Synesthesia as a Compositional Device**

For the past one hundred years, researchers have been intrigued by the condition of synaesthesia, especially colored-hearing type synaesthesia. Many of these studies



focus on how music is a large part of the colored-hearing phenomena; however, minimal research has been conducted on how synaesthesia can affect the musical compositional process. The question, “Can synaesthesia be used as a compositional device?” can be answered by reviewing historical data and musical scores. Before beginning to understand synaesthesia as a compositional device, an understanding of the phenomenon of synaesthesia must be present.

The phenomenon of synaesthesia is defined as “stimulation in one sensory or cognitive stream lead[ing] to associated experiences in a second, unstimulated stream.”<sup>18</sup> This means that when an individual with colored-hearing type synaesthesia hears a stimulus, his/her brain produces not only an understanding of the sound stimulus but also produces a vivid color in their mind’s eye. These sensory streams create an “involuntary concrete sensory experience than can be quite vivid.”<sup>19</sup> The associations formed between the two sensory streams are “regular, systematic, and consistent from one person to another;” thereby, signaling that the cognitive properties and/or pathways must be universal, even if the individual nuances are different (ex. one person sees the pitch ‘a’ as blue and another person sees the pitch ‘a’ as red).<sup>20</sup> These dual sensory streams can form many different types of synaesthesia (ex. Tasting color, smelling color, spoken word that produces tastes, etc.). Nevertheless, for the purpose of this study I will focus on colored-sound type synaesthesia.

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<sup>18</sup> Edward M. Hubbard, "Neurophysiology of Synesthesia." *Current Psychiatry Reports* 9 (2007): 193.

<sup>19</sup> Peter G. Grossenbacher, and Christopher T Lovelace. "Mechanisms of Synesthesia: Cognitive and Physiological Constraints." *Trends in Cognitive Sciences* 5, no. 1 (2001): 36.

<sup>20</sup> Lawrence E. Marks, "On Colored-Hearing Synesthesia: Cross-Modal Translations of Sensory Dimensions." *Psychological Bulletin* 82, no. 3 (1975): 303.

Many studies show that colored-sound type synaesthesia is a complex phenomenon and each individual person with synaesthesia develops a specific nuanced form of the condition. Colored-hearing type synaesthesia is more than a sound stimulus that triggers a color in the mind's eye. For example, Galejev observed that some people with synaesthesia associate pitch with size (low pitches appear bigger than high pitches), pitch with gradations of light (low pitches appear darker than high pitches), melodic patterns with color or shape (a specific melodic pattern has a color or a specific shape associated with the pattern) and timbre with color (trumpets sound red and harps sound blue), just to name a few.<sup>21</sup> Galejev also points out that many of these ideas are common among all people, not just people with synaesthesia, which in turn makes music a natural medium for synaesthesia.<sup>22</sup> In a 2003 study, Galejev makes a universal connection between gravity and music.<sup>23</sup> The study suggests that all synaesthesia-based associations are connected to a larger concept of physical space in music.<sup>24</sup> On a more earthly scale, Grigoryan tests a hypothesis, which looks at music as a natural medium for synaesthesia, by which major keys had warm color associations and minor keys had cold color associations (whether an individual had synaesthesia or not) and determines that most subjects associated a warm color with major keys and cold colors with minor keys.<sup>25</sup>

Because music is highly complex and mode is only one part of the total composition,

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<sup>21</sup> Bulat M. Galejev, "The Nature and Functions of Synesthesia in Music." *Leonardo* 40, no. 3 (2007): 285-288.

<sup>22</sup> Ibid.

<sup>23</sup> Bulat M. Galejev, "Evolution of Gravitational Synesthesia in Music: To Color and Light!" *Leonardo* 36, no. 2 (2003): 129-134.

<sup>24</sup> Ibid.

<sup>25</sup> Levon A. Grigoryan, "Color-Thermal Associations in Music." *Leonardo* 28, no. 1 (1995): 57-58.

researchers have attempted to study which part of the composition gives rise to the color association with mode. Cuddy suggests that the melody plays a large part in mode identifying for people with synaesthesia.<sup>26</sup> Yet some researchers still believe the common synaesthesia for music is more general than mode or melody. Marks conducted a study to determine if light brightness had an effect on people's correlations with loudness or frequency.<sup>27</sup> The study suggests that people have strong correlations between light brightness and frequency (ex. as the light brightness increased so did frequency).<sup>28</sup> Discovering that synaesthesia was strongly tied to music, other researchers analyze how synaesthesia effects the arts.

The visual and sound arts have long been studied for their synesthetic relationship to one another. In the 6<sup>th</sup> century BCE, Pythagoras searched to assign a specific color to each musical pitch.<sup>29</sup> Recently several painters and composers have explored the intersection between color and sound. Many of Vassily Kandinsky's paintings were created in order to represent both a pictorial and musical idea.<sup>30</sup> He discussed this possibility at length with his friend Arnold Schoenberg. More importantly for this research is the connection between composers and synaesthesia. Most research into composers with synaesthesia focuses on Alexander Scriabin and Olivier Messiaen. Scriabin and Messiaen have historical data and musical score information that can be

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<sup>26</sup> Lola L. Cuddy, "The Color of Melody." *Music Perception* 2, no. 3 (1985): 345-360.

<sup>27</sup> Lawrence E. Marks, "On Associations of Light and Sound: The Mediation of Brightness, Pitch, and Loudness." *The American Journal of Psychology* 87, no. 1/2 (1974): 173-188.

<sup>28</sup> Ibid.

<sup>29</sup> Amy Ione, and Christopher Tyler, "Neuroscience, History and the Arts Synesthesia: Is F-Sharp Colored Violet?" *Journal of the History of the Neurosciences* 13, no. 1 (2004): 58-65.

<sup>30</sup> Ibid.

used to trace each composer's use and condition of synaesthesia. Messiaen, through historical data and his own writing, stated that he had colored sound synaesthesia.<sup>31</sup> Messiaen stated that he saw colors "inwardly, this is not imagination, nor is it a physical phenomenon. It's an inward reality."<sup>32</sup> Messiaen's synaesthesia was so profound that he was reduced to nausea at a ballet because the stage was lit with the wrong color for the music.<sup>33</sup> In Messiaen's musical scores, he often placed markings that indicated the color he intended to see through the sound.<sup>34</sup> Messiaen and Scriabin represent the greatest source of information for determining if synaesthesia can be used as a compositional device.

Olivier Messiaen painstakingly placed color indicators in his musical scores and these markings determine consistent synaesthetic associations. His synaesthetic associations are not necessarily the same as Scriabin's. Messiaen's score indications are usually found over chords and Messiaen stated that he would juxtapose certain chords in order to create complex colors.<sup>35</sup> Bernard conducted an analysis of all of the color markings found in Messiaen's scores and developed a table in order to track the consistency in which Messiaen labeled the chords.<sup>36</sup> Bernard discovered that Messiaen's

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<sup>31</sup> Greta Berman, "Synesthesia and the Arts." *Leonardo* 32, no. 1 (1999): 15-22.

<sup>32</sup> *Ibid.*, 18.

<sup>33</sup> *Ibid.*

<sup>34</sup> John Harrison and Simon Baron-Cohen, "Synaesthesia: An Account of Coloured Hearing." *Leonardo* 27, no. 4 (1994): 343-346.

<sup>35</sup> Paul Griffiths, "Catalogue de Couleurs: Notes on Messiaen's Tone Colours on His 70th Birthday." *The Musical Times* 119, no. 1630 (1978): 1035-1037.

<sup>36</sup> Jonathan W. Bernard, "Messiaen's Synaesthesia: The Correspondence between Color and Sound Structure in His Music." *Music Perception* 4, no. 1 (1986): 41-68.

color labeling existed in a hierarchy of criteria that follows “modal quality, specifically mode-transpositional quality, which always takes precedence in any context.”<sup>37</sup> Bernard also determined that chord spacing or superimposed chords create different color associations.<sup>38</sup>

Scriabin’s synaesthetic condition is more highly studied, mostly due to his composition *Prometheus: Poem of Fire*. Historical data states that Scriabin himself identified as someone with synaesthesia.<sup>39</sup> However, as recent studies have suggested, Scriabin’s color and mystic chord matching in *Prometheus* is not based on his own synesthetic experience, but was derived for the purposes of this composition.<sup>40</sup> Nevertheless, Scriabin was still using color and sound matching as a compositional device that would open up the possibility for a synesthetic experience to be encountered by all audience members. Scriabin’s symphony was so influential in Russia that a group of artists, musicians and engineers was founded in 1962 entitled ‘Prometei’.<sup>41</sup> This group worked to develop the integration of light with sound in performance. The group was responsible for the first true performance of *Prometheus* (true in the sense of how

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<sup>37</sup> Ibid., 67.

<sup>38</sup> Ibid.

<sup>39</sup> Kenneth Peacock, "Synesthetic Perception: Alexander Scriabin's Color Hearing." *Music Perception* 2, no. 4 (1985): 483-505.

<sup>40</sup> Anna Gawboy, "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60." PhD diss., Yale University, 2010. B.M. Galejev, and I.L. Vanechkina. "Was Scriabin a Synesthete?" *Leonardo* 34, no. 4 (2001): 357-361.

<sup>41</sup> B M. Galejev, "Music-Kinetic Art Medium: On the Work of the Group 'Prometei' (SKB), Kazan, U.S.S.R." *Leonardo* 9, no. 3 (1976): 177-182.

Scriabin envisioned) in 1975.<sup>42</sup> How Scriabin used synesthesia as a compositional device will be explored in Chapter V.

The current literature on the aspects of transformations of the mystic chord, bass motion, chromatic extensions and synaesthesia as a compositional device brush the surface of this symphony, but no detailed information on any one of these topics has been completed. My thesis will provide detailed information on these topics.

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<sup>42</sup> Bulat M. Galejev, "The Fire of 'Prometheus': Music-Kinetic Art Experiments in the USSR." *Leonardo* 21, no. 4 (1988): 383-396.

## CHAPTER II

### VOICE LEADING PATTERNS OF THE MYSTIC CHORD

In this chapter, I will review the voice leading transformations outlined by Clifton Callender's article, describe a new transformation (invented by me) needed to describe the voice leading in *Prometheus*, and show diagrams tracing mystic chord root movement.<sup>43</sup> Callender outlines two transformations that describe voice-leading parsimony in the music of Scriabin. He first states two rules: (1) that conjunct voice leading is limited to a half step and (2) that each voice may only move once within a sequence.<sup>44</sup> Rule one asserts that the set {014} cannot move to {016} because more than a half step has been traversed. Secondly, rule two maintains that the sequence {014} to {015} to {016} is invalid because only one voice moves in the sequence; therefore, breaking rule one.<sup>45</sup> These rules limit the "number of moving voices to one less than the number of sets in the sequence."<sup>46</sup> The first transformation Callender describes is the "P-relations." P-related sets occur when one voice moves by a half step and all other voices remain the same (i.e. {01234} P {01235}). P relations can be combined, forming sequences of movements; for example the set {1,3,6,7,9,11} can move to {1,3,5,7,9,11} and then again to {1,3,5,8,9,11} forming two P relations. Callender suggests that P-relations should be noted as P<sup>x</sup> where the superscript 'x' numerates the number of P-

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<sup>43</sup> Clifton Callender, "Voice-Leading Parsimony in the Music of Alexander Scriabin."

<sup>44</sup> Ibid.

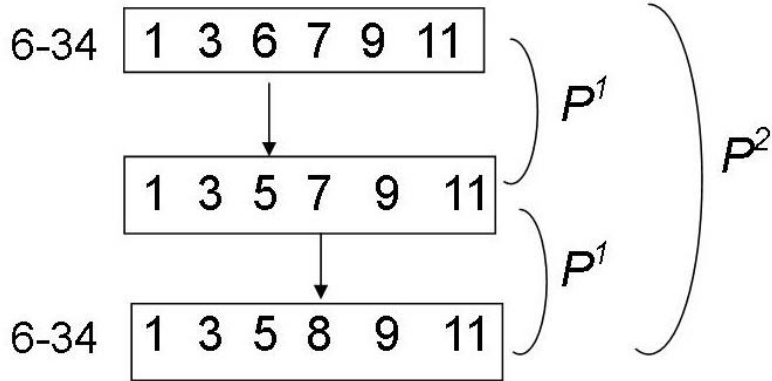
<sup>45</sup> Ibid.

<sup>46</sup> Ibid., pg. 222

relations in the sequence (i.e.  $P^2$  is a sequence that contains two  $P$  transformations).<sup>47</sup>

Figure 1 shows a  $P^2$  transformation between two mystic chord sets.

**Figure 1: P relations**



The second transformation Callender outlines, allows for expansion and contraction in the number of pitch classes between two sets. Callender suggests that a single pitch can be split into two pitches, each a half step away from the starting pitch (i.e. 0 can be split into 11 and 1). This transformation also works in reverse where two pitches, a whole step apart, can fuse into the pitch contained within that whole step (i.e. 11 and 1 can fuse to form 0).<sup>48</sup> Figure 2 shows “split” and “fuse” between two sets. Callender suggests that split and fuse transformations can be noted as  $S_{(x)}$  where ‘x’ is the pitch that either begins the split or ends the fuse (i.e. 0 can  $S_{(0)}$  to 1 and 11 also 1 and 11 can  $S_{(0)}$  to 0).<sup>49</sup> The ability for this transformation to expand or contract sets is not needed for showing voice-leading parsimony between sets of the same size; however, Scriabin does use the split feature in the voice leading between mystic chords.

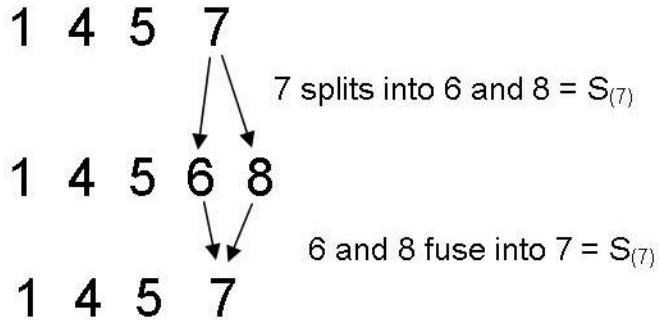
<sup>47</sup> Ibid.

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.



**Figure 2: Split and Fuse Transformations**



In his article, Callender's transformations are shown to describe piano music; therefore, a few features of his system need to be expanded before viewing examples of his transformations in the orchestral setting of *Prometheus*. Register plays the most important role in deciding voice leading avenues; therefore, an A4 in the piano part can transform to an A#4 in the flute part. This allows for instruments to come and go from the texture as the composer sees fit without disrupting the transformations. Secondly, octave transfer must be allowed, especially for pitches held in common; therefore, an F4 in the Clarinet can be held in common with an F5 in the Flute part. With these guidelines in place, Example 1, Example 2 and Example 3 show Callender's transformations in *Prometheus*.

**Example 1:  
P<sup>2</sup> transformation  
with an octave  
transfer**

Luce

Fl. I

Hrn. I

Vln. I

Vln. II

Vla.

Vc.

68

P1

P1

P1 via 8va

## Example 2: P<sup>2</sup> and S<sub>(B#)</sub> Transformation

The image displays a page of a musical score, specifically measures 222 and 223. The score is for a full orchestra and includes the following instruments: Luce, Picc., Fl. 1, Fl. 2, Ob. 1, Ob. 2, E. Hn., 3> Cl. 1, 3> Cl. 2, B. Cl., Bsn. 1, Bsn. 2, C. Bn., Tpt. 1, Tbn. 1, Tuba, Vln. I, Vln. II, Vla., Vc., and D.B. The score is written in treble and bass clefs. Measure 222 shows various rhythmic patterns, including triplets and sixteenth notes. Measure 223 features a complex rhythmic structure with many sixteenth notes. The score includes dynamic markings such as *p1* and *S<sub>(B#)</sub>*. The page number 20 is visible at the top right.

### Example 3: Standard P<sup>2</sup> Transformation

P<sup>2</sup> and S<sub>(x)</sub> transformations can be used to describe most voice leadings between mystic chords with four and two notes in common. However, when two transpositions of the mystic chord share only one note in common, a sequence of P and S transformations cannot lead from one mystic chord to the other. One other transformation is needed. For example the mystic chord built on A (A, D#, G, C#, F#, B) and the mystic chord built on B<sub>b</sub> (B<sub>b</sub>, E, A<sub>b</sub>, D, G, C) share only G in common. A P<sup>4</sup> transformation will move the mystic chord on A to this combination (B<sub>b</sub>, E, G, D, C, F#); however, this does not lead to the B<sub>b</sub> mystic chord because the set is missing A<sub>b</sub>. Moreover, by the rules established

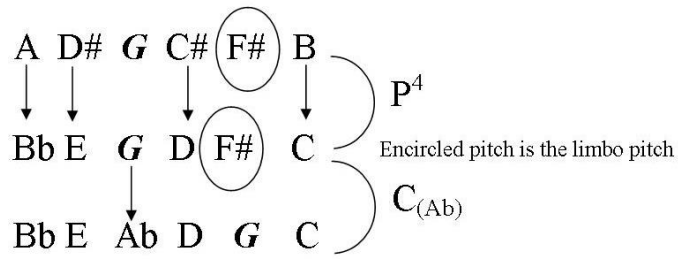
by Callender, F# cannot move to A $\flat$ .<sup>50</sup> Therefore another transformation is needed to complete the sequence. Using the voice-leading patterns in *Prometheus* as a guide, I propose the Common Tone Half Step transformation noted as C<sub>(x)</sub>. This move allows a voice to shift a half-step from a note which is held in common. This transformation would allow for, in the above example, G to shift to A $\flat$  while still maintaining G as a common tone. However, the C transformation leaves one note in limbo (i.e. the F# in our example). Figure 3 demonstrates the C transformation from the above example.

Scriabin, in *Prometheus*, either eliminates the potential for a limbo pitch (Example 4), he moves the limbo pitch to a pitch held in common (Example 5) or removes the limbo pitch without any movement (Example 6). In the C transformation, the subscript 'x' represents the new pitch created from this move (i.e. if A $\flat$  was created via a common tone half-step move from G then C<sub>(A $\flat$ )</sub> would represent this move). For a full list of every P, S and C transformation used in this composition please see Appendix A. Throughout this entire symphony these transformations apply to almost every mystic chord change. There are only a few instances the voice leading cannot be dictated by these transformations. Most often it is the bass voice that is resistant to conforming to one of these transformations. Just as in tonal music, the bass voice is given more voice leading freedom than the inner voices. The bass motion will be discussed more in the next chapter.

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<sup>50</sup> Although other transformational theories allow for movement larger than a half-step, I felt it best to adhere to Callender's rules, and the voice leading in *Prometheus* can be explained without using a larger interval of motion.

**Figure 3: Common Tone Half Step Transformation**



**Example 4: C transformation that eliminates the potential for a limbo pitch**

The musical score for Example 4 shows a C transformation that eliminates the potential for a limbo pitch. The score includes parts for Luce, Fl. 1, Bsn. 1, Hn. 1, Hn. 2, Pno., Vln. I, Vln. II, Vla., and Vc. The transformation is indicated by a C(Eb) symbol above the Vln. II staff.

**Example 5: C transformation that moves the limbo pitch to a pitch held in common**

The musical score is arranged in systems. The first system includes Luce, Fl. 1, Ob. 1, Ob. 2, E. Hn., and Bsn. 2. The second system includes Hn. 1, Hn. 2, Hn. 3, Hn. 4, Hp. 1, and Hp. 2. The third system includes Vln. I, Vln. II, Vla., Cello S., and Vc. The score is marked with a tempo of *avec delice* and a dynamic of *pp*. Measure numbers 99, 100, 101, and 102 are indicated. A box with the number '5' is present above the first measure. A thick black arrow points from the Luce staff at measure 100 to the Fl. 1 staff at measure 101, indicating a transformation. Another thick black arrow points from the Hn. 2 staff at measure 100 to the Hp. 1 staff at measure 101. A third thick black arrow points from the Vln. II staff at measure 100 to the Cello S. staff at measure 101. The score shows various musical notations including notes, rests, and dynamic markings.

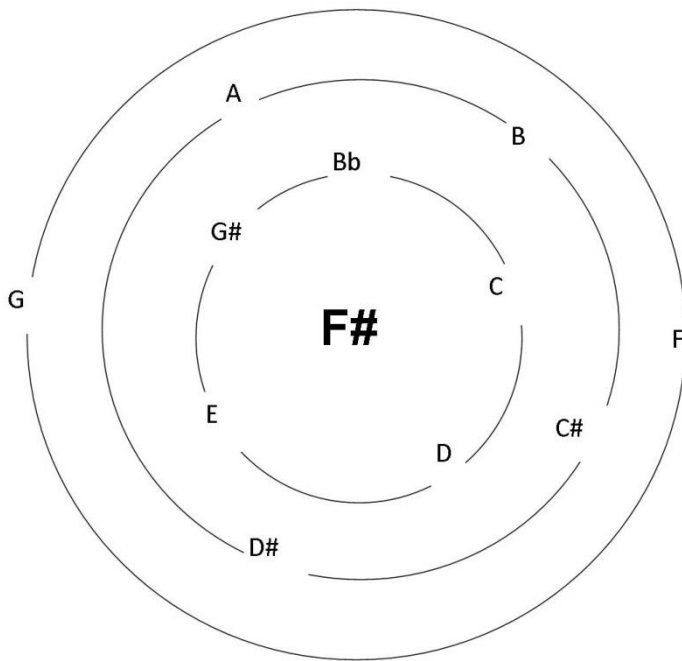
### Example 6: C transformation that removes the limbo pitch

The musical score for Example 6 illustrates a C transformation that removes the limbo pitch. The score is organized into three measures, with measure numbers 238, 239, and 240 indicated. The text "avec un splendide arioso" is written above the first measure. The score includes staves for Luce, B. Cl., Ban. 1, Ban. 2, C. Bn., Hn. 1-4, Tbn. 1, Tuba, Hp. 1-2, Vln. I-II, Vla., Vc., and D.B. The score shows various musical notations, including notes, rests, and dynamic markings. A circled "2" is present in the B. Cl. staff in the first measure. The score is divided into three measures, with measure numbers 238, 239, and 240 indicated. The text "avec un splendide arioso" is written above the first measure. The score includes staves for Luce, B. Cl., Ban. 1, Ban. 2, C. Bn., Hn. 1-4, Tbn. 1, Tuba, Hp. 1-2, Vln. I-II, Vla., Vc., and D.B. The score shows various musical notations, including notes, rests, and dynamic markings.

## Network Diagrams

With these transformations acting to control the voice leading in this composition, diagrams are built to show relative relationships between mystic chords. Different sections of this composition tend to retain one mystic chord as the central home chord. For example, in measures 1-86 the F# mystic chord is used as the central home chord; this section's transformations move away from and return to this mystic chord. Because of this construction, the diagrams showing the relative relationship between mystic chords contain the central chord in the center with the other 11 transpositions encircling the home chord. Each ring around the home chord shows varying degrees of similarity based on the number of common tones present in relation to the home chord. The first ring shares four notes in common, the second ring shares two notes in common and the third ring shares only one note in common. In Figure 4, a diagram built on F# is shown.

**Figure 4: Network Diagram**





With a diagram constructed, mystic chord roots are plotted to show their relative relationship to the home chord. Table 1 shows all of the home chords for this composition.

**Table 1: Home chords<sup>51</sup>**

Home MC	Measure Numbers		Home MC	Measure Numbers
F#	1-86		B	328d-336
F	87-148		E	337-344
C	149-201		E <sub>b</sub>	345-354
A <sub>b</sub>	202-211		F	355-370
F	212-219		D	371-408
F#	220-228		E	409-415
F	229-240		C#	415b-450
B <sub>b</sub>	241-260		E	451-458
sequence	261-300		C#	549-589
D <sub>b</sub>	301-308		A <sub>b</sub>	590-601
A	309-328c		F#	602-606

Each diagram for every home chord is represented in Appendix B. After plotting all mystic chords on these diagrams, two main shapes emerged. The most pervasive shape is the movement from the home chord to its tritone transposition. Out of the nineteen diagrams constructed, thirteen show a move from home chord to its tritone transposition. More often than not, this move is followed by a return to the home chord, creating a tritone oscillation (F# to C to F# to C to F#, etc.). For example, measures 41-48 and measures 69-81 both show oscillations between F# and C and this mystic chord transformation reoccurs several times throughout this symphony. Perhaps this transformation is not a surprise because of the nature of the mystic chord. The construction of the chord contains two tritone intervals with the first interval from the bass being a tritone. This oscillation between tritone transpositions highlights the

<sup>51</sup> The home chords were chosen based on frequency of occurrence, duration, and melodic content.

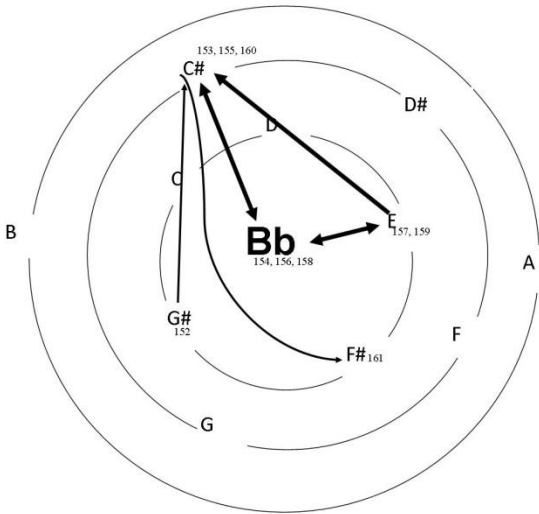
inherent nature of the mystic chord. The tritone transformation is similar to the I to V progression found in tonal music; in that, a major chord, which is the foundation of tonal music, is constructed within a perfect fifth. Therefore, the progression from I to V highlights the inherent nature of the major triad by showing the intervals present within the chord.

The second shape that reoccurs in these diagrams is the diminished triangle. The triangle forms a diminished triad, typically around the tritone transformation and the minor third transformation as is shown in Figure 5 with the bold arrows. These diminished triangles also appear doubled as is shown in Figure 6 with the bold arrows.<sup>52</sup> Considering the construction of the mystic chord, the prevalence of diminished triangles is a bit surprising. Within the six notes of the mystic chord, four triads can be built; two minor triads, one diminished triad, and one major triad. With this construction, a minor triad triangle would seem to appear more often than the diminished triad. However, the diminished triad is merely operating as an extension of the tritone oscillation which is pervasive throughout this symphony. All of the diminished triangles are formed from the tritone oscillation, giving credence to the idea that the triangles are extensions of the tritone oscillation.

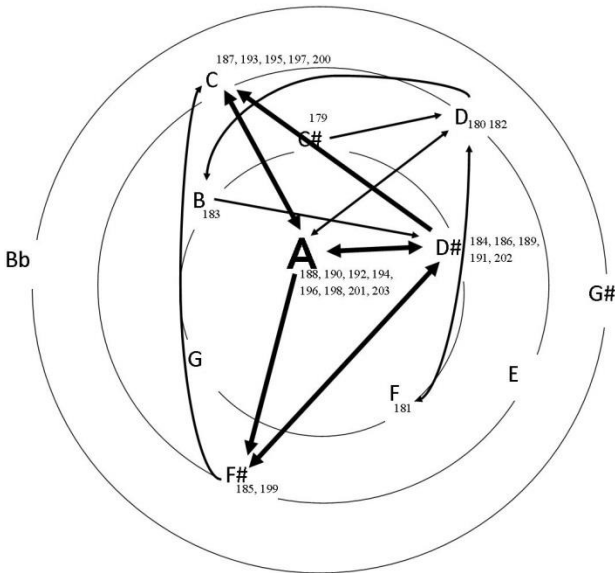
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<sup>52</sup> In these figures, the numbers refer to the chord numbers related to the table in Appendix A.

**Figure 5: Network diagram showing diminished triangle**



**Figure 6: Network diagram showing two diminished triangles**



After identifying the diminished triangles as important shapes within these diagrams, I noticed that triangles in general were an important shape. In Appendix B, all triangles are marked with bold arrows. Many of these triangles have no triad significance; however, the triangle in the D# (#13) diagram shows a triangle that outlines a diminished triad. This triangle is not a diminished triangle because it does not occur as

an extension of the tritone oscillation, but the tritone occurs along a different axis. Both Baker and Gawboy discuss the importance of the polarization of the tritone (or as I term it, the tritone oscillation) and this polarization is the most reoccurring shape.<sup>53</sup> Yet these diagrams also show that the polarization of the tritone is not the complete picture, wherein the tritone is extended to include transpositions around a diminished triad.

P-relations, Spilt/Fuse and Common Tone Half-Step transformations dictate most of the voice leading for this composition and through this voice leading the importance of the tritone and the diminished triad are revealed. However, as mentioned above, Scriabin has given the bass voice more freedom in its voice leading. This freedom need to be explored in order to understand the entire harmonic landscape of *Prometheus*.

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<sup>53</sup> Gawboy, Anna. "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60."

## CHAPTER III

### BASS MOTION

What is the role of a mystic chord inversion in the construction of the symphony? In James Baker's book on Scriabin's music,<sup>54</sup> he notes that the mystic chord does not always occur in root position. Baker argues that the lowest sounding pitches create a bass progression that represents traditional sonata form or at least bass progressions similar to tonality. After making this claim, Baker states that such a sonata-based reading of the composition lies on shaky ground, because other harmonic elements (i.e. leading tones, pre-dominant functions, and tertian harmony) are missing due to Scriabin's use of the mystic chord.<sup>55</sup> Baker begins his bass motion discussion with micro-level tonal bass progressions such as circle of fifths progressions, which can be found in mm. 277-285. Baker also identifies bass progressions that simulate cadence structures such as ♭II-V-I (a progression which is important in Scriabin's tonal music), which occur frequently in mm. 130-183. Baker then constructs a Schenkerian sketch of the bass line, which when reduced, shows bass movement that resembles I-IV-V-I. However, as Baker points out, "it is impossible to cite harmonic evidence for any particular analytical choice, for harmonic components are nontriadic."<sup>56</sup> Although the Schenkerian sketch shows associations between tonal bass progression and the bass progression present in *Prometheus*, the sketches are not convincing. Bass pitch implication of tonal harmony is not sufficient evidence for a reductive analytical technique, which attempts to show

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<sup>54</sup> James M. Baker *The Music of Alexander Scriabin*.

<sup>55</sup> Ibid.

<sup>56</sup> Ibid., 263.

prolongation of a single sonority over large spans of musical time. Perhaps what is most convincing in Baker's sketch is Scriabin's use of F# and C# as pedal points. These two pedal points certainly give the illusion of tonic and dominant, but are aurally lost on the listener because of the atonal harmonic language. Reducing the bass motion to fit the sonata form still does not answer the question of inversion because often the bass pitch in question is not a part of the mystic chord. If a sonata-form bass line is not the answer, perhaps the answer to the question of inversions (or lack of inversion) lies in the relationship between the lowest and the second lowest pitches. My approach negates prolongation ideas and focuses on micro-level chord construction as a governing factor of bass motion. On this micro-level, we can notice that Scriabin attempts to avoid placing the root of the mystic chord in the bass (due to factors explained below) and Scriabin attempts to avoid creating harmonic tritones between the two lowest sounding voices.

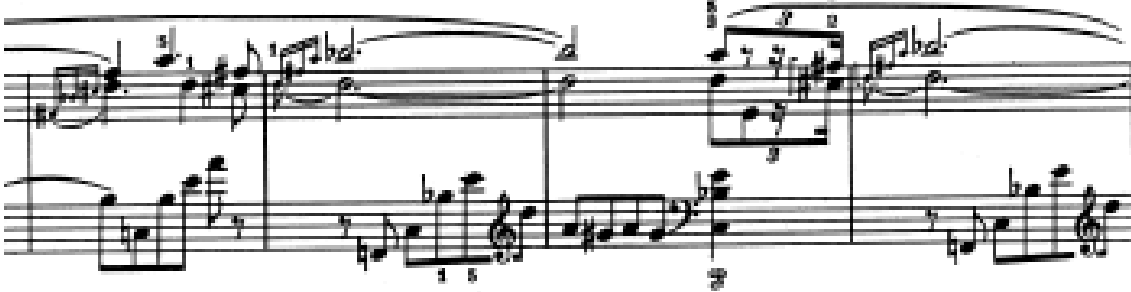
The piano miniature or experiential piece, *Feuillet d'album* op. 58, was written in 1910 in an attempt to puzzle out the workings of the mystic chord as a harmonic and melodic element. This piece bears a striking resemblance to *Prometheus* in the way the mystic chord is used to create harmony and in the way the bass voice is used. This composition is a short ABA form. The first A section (mm. 1-10) utilizes mostly mystic chord material, the B section (mm. 11-14) explores a combination of mystic chord material and alternate bass material and the second A section (15-end) continues the combination of mystic chord material with alternate bass material. In the first A section, the bass line merely arpeggiates chord tones of the mystic chord; however, in m. 11 a pitch outside of the mystic chord appears, Example 7 shows m. 11. In this bass motion, Scriabin includes tonic-dominant bass like motion between pitches F and C. If the F is to

be a part of the mystic chord it would need to be F#; however, that would create a tritone in the bass (between F# and C). In op. 58, Scriabin seems to follow tonal rules in regards to bass motion (i.e. no tritones in the bass). If we consider the bass line in mm. 10-13 (Example 8) we can see an alternation between C and F, which looks like a remnant of tonic-dominant relationships present in tonal music.

**Example 7: Op. 58 I to V bass relationship**



**Example 8: Op. 58 movement between C and F**



In *Prometheus*, the same types of bass motions are present. Although in some sections of the composition Scriabin places tritones in the bass, typically this harmonic interval is composed of other intervals typical of tonality (P4, P5, and sixths). The bass tone alterations frequently occur as chromatic extensions, which will be discussed in the next chapter. Usually the bass tone is altered only by a half step and is only altered in the

bass. Example 9 shows mm. 99-100 where the bass voice is altered to A $\flat$ , but as the bass motion arpeggiates upward the A $\flat$  is changed to A, which is a chord member of the current mystic chord. Example 10 shows mm. 163-164, where the same type of alteration occurs.

**Example 9: Altered bass where higher pitches remain unaltered**

The image displays a musical score for measures 99 and 100. The score is arranged in a system with multiple staves. The instruments listed on the left are: Luce, Fl. 1, Ob. 1, Ob. 2, E. Hn., Bsn. 2, Hn. 1, Hn. 2, Hn. 3, Hn. 4, Hp. 1, Hp. 2, Vln. I, Vln. II, Vla., Cello S., and Vc. The score includes various musical notations such as notes, rests, and dynamic markings. A box with the number '5' is present above the Luce staff. The tempo/mood marking 'avec dolce' is written above the first staff. Measure numbers '99' and '100' are indicated at the beginning of their respective staves. The bass line (Vc.) shows a specific alteration in measure 100, where the pitch changes from A $\flat$  to A.



### Example 10: altered bass where higher pitches remain unaltered

The image displays a musical score for Example 10, spanning measures 163 and 164. The score is arranged in a standard orchestral format with the following parts from top to bottom: Lute, Fl. 1, Fl. 2, Ob. 1, B♭ Cl. 1, Bsn. 1, Hn. 1, Hn. 2, Hp. 1 (Grand Piano), Hp. 2 (Grand Piano), Vln. I (Violin I), Vln. II (Violin II), Vla. (Viola), Cello S. (Cello Solo), Vc. (Violoncello), and D.B. (Double Bass). The key signature is three sharps (F#, C#, G#) and the time signature is 3/4. In measure 163, the Lute part has a whole note G#4. The Bsn. 1 part has a whole note G#2. The Hn. 1 part has a whole note G#4. The Hp. 1 and Hp. 2 parts have a whole note G#4. The Vln. I and Vln. II parts have a whole note G#4. The Vla. part has a whole note G#4. The Cello S. part has a whole note G#4. The Vc. part has a whole note G#2. The D.B. part has a whole note G#2. In measure 164, the Lute part has a whole note G#4. The Bsn. 1 part has a whole note G2. The Hn. 1 part has a whole note G#4. The Hp. 1 and Hp. 2 parts have a whole note G#4. The Vln. I and Vln. II parts have a whole note G#4. The Vla. part has a whole note G#4. The Cello S. part has a whole note G#4. The Vc. part has a whole note G2. The D.B. part has a whole note G2. This illustrates a bass alteration where the lowest notes (Bsn. 1, Vc., D.B.) are lowered by a perfect fourth (from G#2 to G2), while the higher notes remain unaltered.

By far the most common bass alteration is to create perfect fourths or fifths in the bass. In measures 157-158 (Example 11), the E# is altered to E to create a perfect fifth between E and B. The same alteration occurs in m. 272 (Example 13), only this time a perfect fourth is created between B $\flat$  and E $\flat$ . Not only does Scriabin change the lowest

pitch to create perfect intervals he also changes the second to lowest pitch to create perfect intervals. Example 12 shows mm. 183 where E is altered to F to create a perfect fifth between B $\flat$  and F.

**Example 11: Altered bass to create perfect fifth**

The image displays a musical score for Example 11, spanning measures 157 and 158. The score is arranged in a standard orchestral layout with the following parts from top to bottom: Luce (Soprano), Fl. 1, Ob. 1, Bsn. 1, Hn. 1, Hn. 2, Pno. (Piano), Vla. (Viola), Vc. (Violoncello), and D.B. (Double Bass). Measure 157 features a vocal line for Luce with a note marked '157'. The woodwinds and strings provide accompaniment, with some woodwinds playing triplets. Measure 158 features a vocal line for Luce with a note marked '158'. The piano part has a complex rhythmic pattern. The strings play sustained chords. The score is written in a key signature of one sharp (F#) and a time signature of 3/8.

**Example 13: Altered bass to create perfect fourth**

Musical score for Example 13, measures 272-274. The score includes parts for Luce, Fl. 1, Ob. 1, Bsn. 1, Hn. 2, B♭ Tpt. 1, Hp. 1, Vln. I, Vln. II, Vla., Cello S., and Vc. The bass line (Vc.) is altered to create a perfect fourth interval with the upper parts.

**Example 12: Altered second lowest bass pitch**

Musical score for Example 12, measures 183-185. The score includes parts for Luce, Picc., Fl. 1, Bsn. 1, Bsn. 2, C. Bn., Hn. 1, Hn. 2, Hp. 1, Phn., Vln. I, Vln. II, Vla., Vc., and D.B. The second lowest bass pitch is altered.

Because Scriabin does not always seek to eliminate tritones in the bass then the purpose of altering any of the bass pitches is for aural ambiguity. Scriabin understood that the very nature of the mystic chord created aural ambiguity, even more so if the chord was in inversion. Scriabin was quite happy when his friend Sabaneev could not guess the mystic chord's pitch content when Scriabin played the chord in inversion on the piano.<sup>57</sup> If the chord is played in root position as stacked fourths the pitch content of the mystic chord is quite clear and because of this effect the mystic chord is rarely played in root position in *Prometheus*. We can understand through this account about his friend Sabaneev that Scriabin's main goal was to obscure the pitch content of the mystic chord. The pitch content can be even more obscure if the bass pitch is altered to a pitch not included in the current mystic chord. Perfect fifths and fourths in the bass protrude from the texture because of their strong tonal connotations, which lead to a more obscure pitch content.

Overall, my analysis concludes that Scriabin is not thinking in terms of specific inversions, as a composer would in tonal compositions, but is more concerned with how the bass motion can obscure the pitch content of the mystic chord and can add tonal elements in this atonal setting. Beyond localized triad outlining and chromatic motions, no significant bass motion pattern emerges. Even these localized events are short lived and contain no transitional material. One triad may be outlined then Scriabin moves the bass to outline another triad without connecting material the only bass pattern that emerges for any significant amount of time are pedal points. For example F# is a pedal

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<sup>57</sup> Gawboy, Anna. "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60."

point for mm. 47-66, during this time F# is often a dissonant tone. E is used in the same way for mm. 157-178. These pedal points might give the listener a sense of tonal centricity in these short sections; however, when listening to the composition these pedal points tend to obscure the harmonic motion that occurs above them; thereby, achieving Scriabin's goal of pitch content obscurity.

## CHAPTER IV

### MYSTIC CHORD CHROMATIC EXTENSIONS

The *tastiera per luce* (light organ part) is divided into two voices, a fast voice and a slow voice. The fast voice outlines the harmonic motion of the composition by supplying the root of the mystic chord. The slow voice's function, as it relates to the music, is difficult to discern. Most authors recognize that the slow voice forms a whole tone scale. The formation of a whole tone scale by the slow *luce* voice does not form a significant enough function for Scriabin to include this voice in the creation of the composition. Some authors have stated that the slower *luce* voice represents the narrative form of the composition. Anna Gawboy's dissertation compiles accounts (from Scriabin as relayed by his friend Sabneev and Sabneev's personal interruption) and her own interruption of the function of the lower *luce* voice. Gawboy describes that Scriabin's attempt was to create a musical line that represented the Root Races outlined by Helena Blavatsky.<sup>58</sup> Gawboy shows striking and compelling evidence that Scriabin intended the slow *luce* voice to be a representation of this important Theosophical thought. However, this representation is not the only function of the slow *luce* voice. Although the fast *luce* voice supplies most of the outline for the harmonic motion of the symphony, the slow voice contributes to this function as well. Even in a cursory examination of the score would reveal moments in which the fast voice is absent from the *luce* texture. The slow voice, in these moments, assumes the fast voice's responsibility of outlining the harmonic construction. For example, in m. 22 (see Example 14) the fast *luce* voice is tacet while

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<sup>58</sup>Anna Gawboy. "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60." Pg. 211-219. Blavatsky was the primary source for Scriabin's Theosophical belief system.

the slow voice “sounds” an F#. The mystic chord sounding in m. 22 is built on F#. The slow voice extends beyond simply taking over the fast voice’s responsibility occasionally, into the realm of supplying additional harmonic material.

**Example 14: Slow *luce* voice takes over the fast *luce* voice’s role**

The image shows a musical score for Example 14, starting at measure 22. The score includes the following parts and markings:

- Luce:** Treble clef, measure 22 with a fermata.
- Fl. 1:** Treble clef, measure 22 with a whole note chord.
- Bsn. 2:** Bass clef, measure 22 with a whole note chord.
- Hn. 1:** Treble clef, measure 22 with a whole note chord.
- Hn. 2:** Treble clef, measure 22 with a whole note chord.
- Hn. 3:** Treble clef, measure 22 with a whole rest, followed by a measure with a whole note chord marked "con sord."
- Hn. 4:** Treble clef, measure 22 with a whole rest, followed by a measure with a whole note chord marked "con sord."
- B. Tpt. 2:** Bass clef, measure 22 with a melodic line marked "sola imperieux" and a triplet of eighth notes.
- Vln. II:** Treble clef, measure 22 with a whole note chord.
- Vla.:** Bass clef, measure 22 with a whole note chord.
- Vc.:** Bass clef, measure 22 with a whole note chord.
- D.B.:** Bass clef, measure 22 with a whole note chord.

The harmonic material of *Prometheus* extends beyond the six tones of the mystic chord. For comparison, tonal music extends beyond the confines of sounding triads by introducing nonharmonic tones and extended harmonies. Similar ideas apply to the harmonic material of *Prometheus*. The identification of nonharmonic tones in atonal music has been debated in music theory literature for many years. The debate is mainly centered on the identification of stable sonorities, because to describe nonharmonic tones one must be able to identify the stable sonorities between which the nonharmonic tones

move. The problem of stable sonorities is solved in *Prometheus* since Scriabin defined the stable sonority contextually as the mystic chord. In “Schoenberg on Ornamentation and Structural Levels,” Jack Boss describes how nonharmonic tones in atonal music can function similarly to their tonal counterparts. One of his three criteria involves defining non-tonal elements as structural contextually, while another criterion involves atonal ornaments that resemble tonal ones.<sup>59</sup> Scriabin adheres fairly strictly to the tonal nonharmonic tone rules (i.e. a passing tone is approached by a step and left by a step in the same direction, etc.). For example, in mm. 23-24 (see Example 15), the violoncello moves from A (consonant) to A $\flat$  (dissonant) to G (consonant). Making the A $\flat$  a passing tone. Examples of neighbor tones, appoggiaturas and escape tones can be found throughout *Prometheus*.

**Example 15: Nonharmonic tone**

The image shows a page of a musical score for Example 15, covering measures 23 and 24. The score is arranged in a standard orchestral format with multiple staves. The instruments listed on the left are: Luce (Lyric Soprano), E. Hn. (English Horn), B♭ Cl. 1 (B-flat Clarinet 1), Bsn. 1 (Bassoon 1), Bsn. 2 (Bassoon 2), Hn. 3 (Horn 3), Hn. 4 (Horn 4), Tpt. 1 (Trumpet 1), Tpt. 2 (Trumpet 2), Vln. I (Violin I), Vln. II (Violin II), Vla. (Viola), Vc. (Violoncello), and D.B. (Double Bass). The Vc. staff shows a specific melodic line in measure 24: A (circled), A-flat, G. The A-flat is circled and has a 'p' (piano) dynamic marking below it. The score includes various musical notations such as notes, rests, and dynamic markings.

<sup>59</sup> Jack Boss. "Schoenberg on Ornamentation and Structural Levels." *Journal of Music Theory* 38, no. 2 (1994): 187-216.



Extending the mystic chord harmonies (similar to extending triads by adding 7<sup>th</sup>, 9<sup>th</sup>, etc.) is often the role of the slow *luce* voice. Scriabin uses the slow voice as a source of potential harmonic material. Measures 33-40 are a perfect example of this material. Example 16 the sounding mystic chord, as notated by the fast *luce* voice, is E $\flat$ . All six members of the E $\flat$  mystic chord are present; however, E/F $\flat$ , G $\flat$  and B $\flat$  are also present. A few of these pitches could be explained as nonharmonic tones; however, many of these pitches are not prepared or resolved in the conventional manner. But, all of these pitches can be explained by utilizing the potential present in the slow *luce* voice. This voice is “sounding” an F $\sharp$  and E/F $\flat$ , G $\flat$  and B $\flat$  are all a part of the F $\sharp$  mystic chord. Another example of harmonic extension occurs in mm. 174-177a (see Example 17) wherein, the fast voice outlines a B mystic chord, but E, C and D are also present. E, C and D are contained within the B $\flat$  mystic chord, which the slow voice is outlining. Scriabin has melded the function of the fast voice with the slow voice giving clarity to the harmonic material. In that the total harmonic content can be deduced by the mystic chord roots present in both of the *luce* voices, the fast voice providing the root for the primary mystic chord and the slow voice providing chromatic extensions. The results are a land of mystic chord bitonality.

# Example 16: Chromatic extensions

This musical score, titled "Example 16: Chromatic extensions," is a page from a larger work, likely a symphony or opera. It features a vocal line and a full orchestral accompaniment. The vocal part, for a voice named "Luce," is written in a soprano clef and spans measures 33 to 40. The lyrics are: "contemplatif" (measures 33-36) and "peu à peu amine" (measures 37-38). The instrumental parts include Flute 1 and 2, Oboe 1, English Horn, Bassoon 1 and 2, Clarinet in B-flat, Horns 1-4, Piano, Violin I and II, Viola, Violoncello, and Double Bass. The score is in a key signature of one flat (B-flat major or F major) and a common time signature. The vocal line is characterized by long, sustained notes with chromatic descents, particularly in measures 35 and 37. The piano accompaniment features complex rhythmic patterns and chromatic textures, especially in the right hand. The orchestration is dense, with many instruments playing sustained chords or moving lines. The page number "40" is printed at the bottom center.

### Example 17: Chromatic extensions #2

This musical score illustrates chromatic extensions in measures 174 through 177. The score is arranged in a standard orchestral format with the following parts:

- Luce:** Features a long, sustained note in measure 174 that extends through measures 175, 176, and 177.
- Fl. 1, Ob. 1, E. Hn., B♭ Cl. 1:** These woodwind parts play a triplet of eighth notes in measure 175, which then continues as a single note in measure 176 and a triplet in measure 177.
- Hn. 1, Hn. 2:** Horns 1 and 2 play a single note in measure 174, which then extends through measures 175, 176, and 177.
- Hp. 1, Hp. 2:** The harp parts play a single note in measure 174, which then extends through measures 175, 176, and 177.
- Pno.:** The piano part features a complex chromatic line in measure 174, marked with a '12' (likely a fingering or breath mark), and continues with a similar chromatic pattern through measures 175, 176, and 177.
- Vln. I, Vln. II:** Violins I and II play a single note in measure 174, which then extends through measures 175, 176, and 177.
- Vla.:** The viola part plays a single note in measure 174, which then extends through measures 175, 176, and 177.
- Vc.:** The cello part plays a single note in measure 174, which then extends through measures 175, 176, and 177.
- D.B.:** The double bass part plays a single note in measure 174, which then extends through measures 175, 176, and 177.

The score is written in a key signature of one sharp (F#) and a common time signature (C). The measures are numbered 174, 175, 176, and 177. A box containing the number '15' is located above measure 175.

This method of exercising the potential of the slow voice to add harmonic color is often used to create aggregates between two different mystic chords. In Example 18, mm. 199-200 creates an aggregate between the mystic chords C and F#, even though F# is not present in the *luce* part. In a similar moment (mm. 209-210, see

Example 19), the two *luce* voices are present and an incomplete aggregate is formed between the MCs C and A $\flat$  (missing A). This aggregate notion is very clear in measures 305-308 in Example 20. Here, the *luce* part is divided into three voices creating mystic chords built on D $\flat$ , F and A. The harmonic content of the music contains all the pitch members of these three mystic chords.

### Example 18: C and F# aggregate

Musical score for Example 18, measures 199-200. The score includes parts for Luce, Bsn. 1, C. Bn., Pho., Vc., and D.B. The Luce part has a long note with a fermata. The Bsn. 1 and C. Bn. parts have similar long notes. The Pho. part has a complex chordal texture. The Vc. and D.B. parts have a rhythmic accompaniment.

### Example 19: C and A $\flat$ aggregate

Musical score for Example 19, measures 209-210. The score includes parts for Luce, Bsn. 1, C. Bn., Pho., Vc., and D.B. The Luce part has a long note with a fermata. The Bsn. 1 and C. Bn. parts have similar long notes. The Pho. part has a complex chordal texture. The Vc. and D.B. parts have a rhythmic accompaniment.

### Example 20: D $\flat$ , F, and A aggregate

The musical score for Example 20, measures 265-268, is presented in a standard orchestral layout. The top staff is for the Luce voice, showing a long, sustained note in the bass register. Below it are the woodwinds: Bsn. 1, Hn. 2, and B♭ Tpt. 1. The percussion section includes Timp. and Hp. 1. The piano part (Pno.) features a complex, rhythmic accompaniment with triplets and sixteenth notes. The string section (Vln. I, Vln. II, Vla., and Vc.) plays a dense, textured accompaniment.

Most often the slow *Luce* voice's potential is exercised in the bass voice. As described in Chapter III, Scriabin often adjusts the bass voice's pitch content to create bass motions similar to tonality and to maintain tonal-like intervals between the two lowest sounding voices in order to obscure the pitch content of the mystic chord. Most often this bass pitch change utilizes the potential present in the slow *luce* voice. In Example 22, m. 51 F# is the bass pitch, which is not present in the C# MC being presented; however, it is the root of the slow *luce* voice MC. One could argue that this F# is merely a pedal tone because it is prepared and resolved with the same pitch; however, the frequency in which Scriabin uses this same construct begs a better answer than a pedal tone. Measures 268, 270, and 272-273 are examples of this same bass note

construct, where Scriabin utilizes the potential of the slow *luce* part to create bass motion similar to tonality. In m. 268 (see Example 21) Scriabin adds A $\flat$  (a note present in the C MC) to create a typical I to V motion in the bass. Measures 270 (see Example 24) and 272-273 (see Example 23) create this same motion in different key areas.

**Example 21: Chromatic extension to create I to V relationship in the bass**

**Example 22: Chromatic extension in bass F#**

**Example 23: Chromatic extension to creat I and V relationship in the bass #2**

Musical score for Example 23, measures 272-273. The score includes parts for Luce, Fl. 1, Ob. 1, B♭ Cl. 1, Bsn. 1, Bsn. 2, Hn. 2, B♭ Tpt. 1, Hp. 1, Vln. I, Vln. II, Vla., Cello S., and Vc. A box highlights measure 272 with the number 26 above it.

**Example 24: Chromatic extension to create I and V relationship in the bass #3**

Musical score for Example 24, measure 270. The score includes parts for Luce, Fl. 1, Fl. 2, E. Hn., Hn. 1, Hn. 2, B♭ Tpt. 1, Vln. I, Vln. II, Vla., and Vc. Measure 270 is marked with the number 270 above it.

## CHAPTER V

### SYNESTHESIA AS A COMPOSITIONAL DEVICE

If we hope to gain a clear image of how the mystic chord functions throughout the composition, we must consider the aspect of light. As many writers have pointed out, there is a direct link between the mystic chord and the light organ part.<sup>60</sup> Because this direct link exists between light and the transformations of the mystic chord, we must consider the role the light schema plays in the choice of the transpositions of the mystic chord. In addition, this symphony is a tone poem; therefore, the light schema plays a role in the symbolist meaning of the symphony. If we consider the dual-modality of synesthesia, which is thrust upon the listener and performer, as a way to interpret the light/sound relationship then we can ask the question, can synesthesia be used as a compositional device?

Let us recall the function of the two light voices. The fast *luce* voice outlines the root of the mystic chord being presented, which gives the listener a sense of the harmonic rhythm and harmonic content.<sup>61</sup> Without this connection the changes in the harmonic content would be almost impossible to aurally perceive. The slow *luce* voice has the potential to add to the harmonic content; however, its primary purpose is to bring clarity to the form and to provide direction to the Symbolist drama. These two voices are so linked to the music that one without the other makes the symphony unintelligible. With

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<sup>60</sup> Anna Gawboy, "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Peom of Fire op. 60", MacDonald, "Lighting the Fire: Skryabin and Colour", Peacock, "Synesthetic Perception: Alexander Scriabin's Color Hearing".

<sup>61</sup> Anna Gawboy, "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Peom of Fire op. 60"



this strong interrelationship Scriabin had to consider light and sound as one unit; thereby, using a dual-modality situation (synesthesia) as a compositional device.

Gawboy's research suggests that Scriabin pre-planned the slow *luce* voice to "play" a whole-tone scale in order to represent the Symbolist meaning of the evolution of humans through the Root Races. This process involves seven stages from the Spiritual to the Material and a cyclic return to the Spiritual. A whole-tone scale is the perfect musical embodiment of this idea because it contains seven steps beginning and ending on the same pitch. Not only was the whole-tone scale pre-planned, but also the color associations were planned according to the specific degrees of chromaticism present between different transformations of the mystic chords and their relation to one another via their placement on the physical color organ.<sup>62</sup> In Gawboy's dissertation, she provides a detailed correlation between the *luce* voices and the Symbolist drama Scriabin wished this symphony to embody; therefore, there is no need to cover this material within the confines of this thesis.<sup>63</sup> However, with this large body of research it is clear that Scriabin pre-planned all of the connections between the *luce* voices, the dramatic content and the musical material.

In the same way a composer may consider employing other compositional devices, which must be pre-planned such as canon, motif development, ostinatos, etc. to convey the narrative of the composition, Scriabin considered a dual-modal environment as a compositional device. This type of device requires (as we have seen) a high degree of specific and detailed planning. Clearly Scriabin is using a synesthetic environment as

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<sup>62</sup> Ibid.

<sup>63</sup> Ibid.

a way to convey the Symbolist narrative of *Prometheus*. Without the connection between color and sound the higher level organization and meanings are lost because both rely on each other to form a complete unified art form. This, of course, was Scriabin's ultimate goal; to create a single unified art form which combined all sensory modalities.<sup>64</sup>

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<sup>64</sup> Scriabin hoped to achieve this in his *Mysterium*, but he died before he had a chance to achieve his goal. Ibid.

## CHAPTER VI

### EXCERPT CASE STUDIES

This chapter explores how transformation theory, bass motion and chromatic extensions relate to form an analytical narrative. The analytic narrative will be added to the esoteric narrative described by Anna Gawboy to form a whole unit, which can be used to describe how Scriabin uses synesthesia as a compositional device. I will explore these ideas in two large excerpts; the first from mm. 1-86 and the second from mm. 183-219.

The first excerpt (mm. 1-86) represents the first full duration of the slower *luce* voice and encompasses the first network diagram built on F# (see appendix B). A cursory glance at the network diagram shows a relatively small collection of mystic chords. Besides the home mystic chord of F#, only six other transpositions of the mystic chord are utilized; three that share four notes in common and three that share two notes in common. Two types of transpositions are most common in this section; transposition via descending third relationships or oscillation from F# to C. These transposition relationships lead to a preponderance of P and S transformational relationships due to the number of common tones (as seen in Appendix A). In these relationships, F# is almost always one of the notes held in common (meaning, one can hear F# through most of this section). The transformational relationships are aurally salient in the strings in mm. 67-69 and the piano in mm. 58-60. The upper strings transform six chords, whose roots outline a full-diminished seventh chord, and the upper strings accomplish this task by mostly half-step motion or, in order terms, through consecutive P-relations. The piano creates a smooth transition between E and C# mystic chords by outlining the E mystic

chord then transposing the figuration up a half step (or by P-relations) while keeping the common tones in order to outline the C# mystic chord. This process is reversed and repeated to create a short oscillation between E and C# mystic chords. Scriabin exercises the potential of chromatic extension only to keep F# in the bass between mm. 47-66. This allows for the most significant bass motion to lie between C (mm. 41-46) and F# (mm. 47-66). Also this section contains one of the only root position mystic chords (in m. 29 on F#) found in the entire symphony. With these elements in place let us relate them to Gawboy's esoteric reading.

This section introduces fundamental ideas important to the esoteric reading of the entire symphony.<sup>65</sup> The first chord, a mystic chord on A in an inversion, represents the unity from which the rest of the piece develops. Sabaneev describes the first chord as representing the chaos before the world was put into order/creation.<sup>66</sup> Scriabin also establishes F# as the acting tonic of the composition and A as a secondary tonic by opening and closing the first thematic group with these two mystic chords.<sup>67</sup> The most important esoteric idea presented in this section is the relationship between F# and C as it is linked to the relationship between Spirit (F#) and Material (C).<sup>68</sup> The entire symphony is designed to show the descent from spirit or formlessness into material or matter and the unattainable cyclic return to spirit. The descent into matter is sparked by the Promethean

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<sup>65</sup> This whole paragraph is a summary of Gawboy's "Color Stage I" presented in Chapter six of her dissertation. Anna Gawboy, "Alexander Scriabin's Theurgy in Blue: Esotericism and the Analysis of Prometheus: Poem of Fire op. 60."

<sup>66</sup> Ibid., 242.

<sup>67</sup> Ibid., 245.

<sup>68</sup> Ibid., 245.

character endowing humans with *Manas*, which is the light of knowledge.<sup>69</sup> This gift “was both a blessing and a curse for humanity” because it can generate sorrow produced by the interaction of passions and aspirations (i.e. “the internal tension of the human soul”).<sup>70</sup> Scriabin establishes that the piano represents the Promethean hero and sets in opposition the solo piano against the orchestra to show the relationship between demi-gods (piano) and gods (orchestra)<sup>71</sup>. This section introduces the individual elements of these two battles (spirit v. matter and demi-god v. god) and foreshadows the dramatic action.

The role of colored light fuses the analytical and esoteric reading of this section. Gawboy suggests that the colors are assigned to mystic chord transpositions via the circle of fifths. Table 2 shows the mystic chord roots and their color associations that Gawboy defines in her dissertation.<sup>72</sup> Many of the color associations are lifted directly from Blavatsky’s text. Scriabin follows Blavatsky’s assignment scheme by representing C as the material, red and F# as the most spiritual, violet.<sup>73</sup> Gawboy suggests that with those two poles in place the rest of the colors were chosen based on Goethe’s color wheel.<sup>74</sup>

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<sup>69</sup> Ibid., 283.

<sup>70</sup> Ibid., 283.

<sup>71</sup> Ibid., 250, 283.

<sup>72</sup> Ibid., 185.

<sup>73</sup> Ibid., 197.

<sup>74</sup> Ibid., 185-200.

**Table 2: Mystic chord roots and color associations**

Mystic Chord Root	Color
C	Plain Red
G	Orange (red-yellow)
D	Sunny Yellow
A	Green
E	Dark blue-greenish
B	Dark blue with light blueness
F#/G <sub>b</sub>	Deep dark blue with hints of violet
C#/D <sub>b</sub>	Pure violet
G#/A <sub>b</sub>	Lily colored
D#/E <sub>b</sub>	Steely blue, metallic
B <sub>b</sub>	Metallic leaden grey
F	Dark Red

F# and A as tonic and secondary tonic respectively, are reinforced by their color associations; in that, when these two colors appear, Scriabin intends to recall the beginning of the piece (either with or without the beginning melodic ideas).<sup>75</sup> With the limited number of transpositions of the mystic chord present in this section there is also a limited number of colors represented. This section typically limits the color palette to spiritual type hues (blue, violet and green) expect when Scriabin wants to foreshadow the battles between demi-god and god.<sup>76</sup> In these moments, Scriabin sets up a striking color palette of dark blue-violet and red. Scriabin moves away from this limited color palette in mm. 47-66 and develops colors of yellow and gold; however, F# remains as a pedal tone serving as an aural indication of the slow *luce* voice.<sup>77</sup> This color shift coincides with a shift in melodic content; wherein, the piano plays a light joyful dance figure, which is a contrast to the dark brooding melodic figures. This color shift is also

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<sup>75</sup> Ibid., 245.

<sup>76</sup> Ibid.

<sup>77</sup> Ibid.

represented on the F# network diagram. The spiritual hues are presented by the double diminished triangle and the transformations that occur behind these triangles are the transformations between E, D and C# mystic chords, which are represented by the normal arrows. The network diagram clearly shows a pattern break in which the home chord F# and its surrounding triangles are mostly avoided.

As each analytic layer is unfolded, the connection between the harmonic activity of the composition and the light schema gains a strong sense of unity. In the example above, the light joyful dance melody is accompanied by bright and joyful colors, which is a product of the connection between the mystic chord roots and their associated colored light. The associations between chord root and color are established before a single melodic idea was written. This tiny example shows how Scriabin was using synesthesia as a compositional device. Scriabin could have set the dance melody to accompany a whole host of different colors by merely choosing different transpositions of the mystic chord, but if Scriabin wanted to show a similarity between a bright and joyful light schema and a bright and joyful melody, his harmonic options were limited by the synesthetic associations given to each individual mystic chord. Therefore, the harmonic progression of the mystic chord is dictated solely by a need to develop a synesthetic world in which the light controls the “telling” of the Promethean story with the support of a significant melodic element. This means that the harmonic progression is a consequence of the prearranged associations between the light schema and the mystic chord roots and not a consequence of particular bass motions or transpositions that mimic tonal structures. For *Prometheus*, synesthesia is the controlling composition device, which dictates and informs the other compositional elements.

The second excerpt is taken from mm. 183-219 and is under the slow *Luce* voice notated as C. This section includes part of the third network diagram and all of the fourth and fifth network diagrams. Each one of these diagrams shows a relatively small number of mystic chords being used. The P-relation is highly used and creates very conjunct voice leading between mystic chord transpositions. This is especially evident in the piano part in mm. 191-200; wherein, the figuration remains the same but within each figuration the pitches change only by half step. This is due to the high number of common tones present between many of the mystic chord transformations. For example, in mm 184-211 all of the individual transformations maintain four common tones. In this excerpt, Scriabin uses the chromatic extension potential to foreshadow mystic chord aggregates. For example, the piano, in mm. 197-198 (see Example 25) the first 16<sup>th</sup> on beat three of each measure (pitches, A#, D# and G# and encircled) are not a part of the C mystic chord, but are a part of the F# mystic chord. This foreshadows the aggregate that is present in mm. 199-200; see Example 18 in Chapter IV.



### Example 25: Foreshadowing aggregates through chromatic extension

The image displays a musical score for measures 197 and 198. The instruments listed are Luce, Ob. 1, B♭ Cl. 1, B♭ Cl. 2, Bsn. 1, C. Bn., Hn. 1, Hn. 2, Pno., Vla., Vc., and D.B. The score shows various musical notations, including rests, sixteenth-note patterns, and chords. Two specific chords in the piano part are circled in red, highlighting chromatic extensions. The piano part features a complex sequence of chords and melodic lines, with some chords marked with a '3' indicating a triplet. The woodwind and brass parts have rests in measure 197 and enter in measure 198 with specific rhythmic patterns. The strings play a steady accompaniment with triplets.

Gawboy defines this excerpt as the “materialization of the spirit;” in which, the human spirit rails against the “creator-gods.”<sup>78</sup> The piano’s violent sequence of melodies depicts the human spirit’s battle to become truly material, an abandonment of the spiritual, while the orchestra, in its creator-god fashion, attempts to subdue the raging spirit. These smaller struggles present in mm. 183-219 will lead to a great battle (i.e. “the first orchestral climax”) in mm. 297-301.<sup>79</sup> Gawboy suggest that the mystic chord

<sup>78</sup> Ibid., 282-283.

<sup>79</sup> Ibid., 284-290.

aggregates represent “the internal conflict between spiritual and material aspects of man.”<sup>80</sup>

In mm. 183-219, the overall color scheme is red. Red, the color of material (also the color of blood) is reflected here in the battle for materiality. Even the internal struggle of the aggregates is bathed by the slow *luce*'s C (red) showing, in my opinion, a global disinterest in the internal struggles of man. Gawboy states that in Scriabin's notes on the Paris performance score, he indicates fire, lighting, and violent sparks and burst to accompany these measures adding a greater depth and depiction of the ensuing battle.

This battle takes place under the color scheme of red; therefore, Scriabin, by his own color and mystic chord associations, is limited in his harmonic choices. The melodic motives are conceived inside mystic chords that are associated with red color palettes. Here again is an example of how synesthesia was the overlord of all compositional elements. Measures 187-190 contain the same melodic and harmonic ideas as mm. 5-8; however, Scriabin needed to transpose these ideas in order to reach a mystic chord that is associated with red. In another composition, a composer may have kept the same transpositional level to show a clearer relationship between the beginning ideas and the ideas present in these measures. However, Scriabin, by using a synesthetic environment, cannot utilize the same transpositional level. He must transpose in order to create the correct synesthetic environment for this moment in the esoteric narrative of the composition.

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<sup>80</sup> Ibid., 284

## CHAPTER VII

### TRANSFORMATIONS AND BEYOND

Much of the work in this thesis resides in the appendixes that follow. I conducted a detailed pitch by pitch analysis in an effort to show exactly how each voice leading transformation was executed. The biggest obstacle to this type of analysis is the lack of a quality critical edition score. I believe many errors are present in the small pitch details of this score. I have read the frustrations of other researchers who lament over the same pitch errors. Perhaps the next great research project into Scriabin's *Prometheus* is to produce and publish a detailed critical edition, which would greatly facilitate further research into this symphony.

Transformational theory works well at describing a majority of the voice leading patterns of this symphony. In the excerpt overviews, I showed how Scriabin creates voice leading patterns that reflect not only close proximity (i.e. number of common tones), but also how they create grouping (diminished triangles) and ultimately generate color schemes that "tell" the esoteric story. The purpose of this study was to utilize the current transformational models at the strict score surface level. Callender's theory provides two-thirds of the transformational processes presented here, but my addition of the Common-Tone Half Step transformation allows for a complete understanding of the voice leading pattern Scriabin uses in *Prometheus*. Of course, this analysis is enhanced if you understand the Theosophical ideology in which this composition is steeped. Luckily, the information about the influence of Theosophy has already been presented by Anna Gawboy's dissertation, which is remarkably thoughtful and detailed.

The melding of transformational theory, network diagrams, and detailed Theosophy conceptualization leads to an understanding of how the *luce* voices function in *Prometheus*. The *luce* sets forth the outline of the basic harmonic structure, shows important esoteric sectional divides that help “tell” the story, and is the tool for how synesthesia works as a compositional device in this composition. The light schemas of this composition have been widely noted; however, the impact this has on the compositional process is hardly noted. If we think about synesthesia as a compositional device, in the same vein as a canon or an ostinato, then the impact of the synesthetic environment on the harmonic progression, transpositional level and melodic content is clear. In the excerpt case studies, I described how the creation of the synesthetic environment controlled the harmonic progression, transpositional levels and even to some degree the melodic content because of the connection between the mystic chord roots and the color assignments. This strict one to one connection bears most of the weight of the esoteric meaning of the composition because it must dictate the light and the harmonic transformations; therefore, the creation of the synesthetic environment must be thought of as a compositional device.

Although no one analysis seeks to understand all aspects of this composition, I believe the next adventure in understanding this symphony is through application. Perhaps composers can adopt some or all of the information contained within this masterpiece to create a composition that seeks to envelop the audience in a synesthetic world of sound and color. Through application of synesthesia as a compositional device perhaps we will gain better understanding of this composition and heightened

understanding of how multi-sensory art can bring the human spirit to a heightened level of understanding and thought.

APPENDIX A

P, S AND C TRANSFORMATIONS

Legend: A = notes not used NOTE: all pitches are in C

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
1	1-12			A, D#, G, C#, F#, B	
2	13-14	TT	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Tbn. C# P Bsn. C Fl. F# P 8vb Bsn. F
3	15	M6	P3, C(B <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	Bsn. F P Cl. F# D.B. E <sub>b</sub> P D.B. E Bsn. D <sub>b</sub> P 8va Cl. D Bsn./Vc A C Cl. B <sub>b</sub> G is deleted
4	16-18	M6	P1, S(D), C(G)	A, D#, G, C#, F#, B	Cl. B <sub>b</sub> P B. Cl. B Cl. D S Ob. D# & Hn. C# (Hn. D P Hn C#) Cl. F# C B. Bl. G C is deleted
5	19	M6	P1, S(B), C(F <sub>b</sub> )	F#, B#, E, A#, D#, G#	B. Cl. G P 8va E. Hn. A <sub>b</sub> B. Cl. B S Vc. A# & E. Hn. C Ob. D# C E. Hn. F <sub>b</sub> A is deleted
6	20	m3	P1, S(A <sub>b</sub> ), C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Hn. A <sub>b</sub> S Ob. A & Hn. G E. Hn. C C Hn. D <sub>b</sub> E. Hn. F <sub>b</sub> P 8va Fl. F
7	21	TT	P2	A, D#, G, C#, F#, B	Tpt. F P Tpt. F# Fl/Ob. C P Tpt. B
8	22	M6	P3, C(E)	F#, B#, E, A#, D#, G#	Hn. A P Hn. A# Tpt. G P Tpt. A <sub>b</sub> Tpt. C# P Tpt. C Hn. D# C Hn. E
9	23-26	m3	P1, S(C), C(G)	A, D#, G, C#, F#, B	Hn. A# P Hn. A Tpt. C S Tpt B & Tpt. C# Vc. F# C Vc. G E Moves to D#
10	27	M6	P1, C(E)	F#, <del>B#</del> , E, A#, D#, <del>G#</del>	Hn. A P Hn. A# Hn. D# C Hn. E
11	27b	m3	P2	A, D#, G, C#, <del>F#, B</del>	Fl. F# P Fl. G Hn. A# P 8vb Vc./Bsn. A C# has no transformation

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
12	28-32	M6	P1, C(E)	F#, B#, E, A#, D#, G#	Fl. G P Fl. G# Hn. D# C Hn. E F#, B# & A# have no transformations
13	33-40	m3	P3, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Pno. E P Pno. F Ob. G# P E. Hn. G Pno. B# C Pno. D <sub>b</sub> F# is deleted Pno. A# P Pno. A
14	41-44	M6	P2, C(A)	C, F#, B <sub>b</sub> , E, A, D	Ob. F P E. Hn. F# B. Cl. A C Bsn. B <sub>b</sub> Pno. D <sub>b</sub> P Pno. D
15	45	TT	P2	F#, B#, E, A#, D#, G#	E. Hn. A P E. Hn. G# Fl. D P Fl. D#
16	46	TT	P2	C, F#, B <sub>b</sub> , E, A, D	E. Hn. G# P E. Hn. A Fl. D# P Fl. D
17	47-48	TT	P2	F#, B#, E, A#, D#, G#	Vla. D P Pno. D# Vln. A P Vln. G#
18	49-50	m6	P2	D, G#, C, F#, B, E	Pno. D# P Pno. D Vln. A# P Pno. B
19	50b	M2	P2	E, A#, D, G#, C#, F#	Pno. B P Pno. A# E. Hn. C P 8va Fl. C#
20	51	M6	P1, S(E), C(B)	C#, Fx, B, E#, A#, D#	Pno. G# P Pno. Fx Hn./Pno. E S Hn./Pno. E# & Vln. D# Hn. A# C Hn. B
21	51b	m3	P1, S(E), C(D)	E, A#, D, G#, C#, F#	Fl. C# C Fl. D Pno. Fx P Pno. G# Pno. E# & Vln. D# S Pno. E F# remains from previous chord
22	52-54	M6	P2, S(E), C(B)	C#, Fx, B, E#, A#, D#	Pno. G# P Pno. Fx Pno. Cx P 8va Pno. C# Pno. E S Pno. E# & Vln. D# Pno. A# C Pno. B D is deleted
23	55-56	P4	P3	F#, B#, E, A#, D#, G#	Pno. Fx P Pno. G# Cl. C <sub>b</sub> P E. Hn. C Pno. E# P Pno. E F# remains from previous chord
24	57-58	m6	P2	D, G#, C, F#, B, E	Fl. A# P Fl. B Pno. D# P Pno. D

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
25	58b	M2	P2	E, A#, D, G#, C#, F#	Pno. B P Pno A# E. Hn. C P 8va Vln. C#
26	59	M6	P1, S(E), C(B)	C#, Fx, B, E#, A#, D#	Pno. G# P Pno. Fx Pno. E S Pno. E# & Vln. D# Hn. A# C Hn. B D is deleted
27	59b	m3	P2, S(E)	E, A#, D, G#, <del>C#</del> , F#	Vln. C# P Vln. D Pno. Fx P Pno. G# Pno. E# & Vln. D# S Pno. E F# remains from previous chord
28	60-63	M6	P2, S(Cx), C(B)	C#, Fx, B, E#, A#, D#	Pno. G# P Pno. Fx Pno. E P Pno. E# Pno. Cx S Pno. D# & via 8va Pno. C# Pno. A# C Pno. B
29	63b	m3		E, A#, D, <del>G#, C#</del> , F#	Transition
30	63c-66	M6	P2, C(C <sub>b</sub> )	C#, Fx, B, E#, A#, D#	E. Hn. F# P E. Hn. Fx Cl. B <sub>b</sub> C Cl. C <sub>b</sub> Fl. D P Pno. D# C# & E# have no transformations
31	67	m6	P1	A, D#, <del>G, C#, F#</del> , B	Pno. A# P 16vb Vc. A
32	67b	M6	P3	F#, B#, E, A#, <del>D#, G#</del>	Vln. D# P Vln. E Vln. B P Vln. B# Vc. A P Vla. G# F# has no transformation
33	68	m3	P3	E <sub>b</sub> , A, D <sub>b</sub> , <del>G, C</del> , F	Vln. E P Vln. F Vln. B# P Vln. D <sub>b</sub> Vla. A# P Vla. A E <sub>b</sub> has no transformation
34	68b	M6	P3	C, F#, B <sub>b</sub> , E, <del>A, D</del>	Vln. F P Vln. F# Vla. A P Vla. A# Vc. E <sub>b</sub> P 8va Vln. E
35	68c	M6	P2, S(A#)	A, D#, G, C#, <del>F#, B</del>	Vln. F# P Vln. G Vln. E P Vln. E <sub>b</sub> Vla. A# S Vln. G & 8vb Vc. A
36	69-73	M6	P2, S(G), C(E)	F#, B#, E, A#, D#, G#	Vln. G S Vln. G# & Vc. F# Vla. C# P Pno. B# Vc. A P 8va Pno. A# Vln. E <sub>b</sub> C Pno. E



Chord #	Measure #	Interval	Transformation	MC Notes	Comments
37	74	TT	P2	C, F#, B $\flat$ , E, A, D	Pno. G# P Pno. A Pno. D# P Pno. D
38	74b-75	TT	P2	F#, B#, E, A#, D#, G#	Pno. A P Pno. G# Pno. D P Pno. D#
39	76	TT	P1	C, F#, B $\flat$ , E, <del>A</del> , D	Pno. D# P Pno. D
40	76b-77	TT	P1	F#, B#, E, A#, D#, G#	Pno. D P Pno. D# G# has no transformation
41	78-81	TT	P2	C, F#, B $\flat$ , E, A, D	Pno. G# P Pno. A Pno. D# P Pno. D
42	81b	M6	P2	A, D#, <del>G</del> , <del>C#</del> , <del>F#</del> , B	Vln. B $\flat$ P Vln. B Cl. E P Vln. D#
43	81c	M6	P3	F#, B#, E, A#, <del>D#</del> , <del>G#</del>	Vln. D# P Vln. E Vln. B P Vln. B# Vc. A P Vla. G# F# has no transformation
44	82	m3	P3	E $\flat$ , A, D $\flat$ , <del>G</del> , <del>C</del> , F	Vln. E P Vln. F Vln. B# P Vln. D $\flat$ , Vla. A# P Vla. A E $\flat$ has no transformation
45	82b	M6	P3	C, F#, B $\flat$ , E, <del>A</del> , <del>D</del>	Vln. F P Vln. F# Vla. A P Vla. A# Vc. E $\flat$ P 8va Vln. E
46	82c	M6	P2, S(A#)	A, D#, G, C#, <del>F#</del> , <del>B</del>	Vln. F# P Vln. G Vln. E P Vln. E $\flat$ Vla. A# S Vln. G & 8vb Vc. A
47	83-85	M6	P2, S(G), C(E)	F#, B#, E, A#, D#, G#	Vln. G S Vln. G# & Vc. F# Vla. C# P Pno. B# Vc. A P 8va Pno. A# Vln. E $\flat$ C Pno. E
48	86	m6	P1, C(B)	D, G#, C, F#, B, E	Pno. B# C Pno. B Pno. D# P Vla. D A# is deleted
49	87-89	m3	P2, S(F#)	F, B, E $\flat$ , A, D, G	Pno. G# P Pno. A Pno. E P Pno. E $\flat$ Pno./Vc. F# S Vc. F & Pno. G C is deleted
50	90	TT	P1	B, E#, A, D#, <del>G#</del> , C#	Vln. D P Vln. C#
51	91-93	TT	P1	F, B, E $\flat$ , A, D, G	Vln. C# P Pno. D G remains from previous chord
52	94-96	m6	P1, C(A#)	C#, Fx, B, E#, A#, D#	Vln. D P Vln. C# Pno. B C Pno. A# A is deleted

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
53	96b-97	TT	P2	G, C#, F, B, E, A	Pno. D# P Pno. E Pno. A# P Pno. A
54	98	m6	C(C)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Fl. C# C Fl. C E <sub>b</sub> has no clear transformation
55	99	M6	P3, C(D <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	Fl. C C Fl. D <sub>b</sub> Vla. G P Vln. F# Ob. A P Ob. B <sub>b</sub> Bsn. E <sub>b</sub> P 8va Ob. E
56	99b-100	m3	P2, S(F#)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	w/o Luce for 2 beats in m. 99 Vln. F# S Vln. F & Vln. G Vla. E P Vla. E <sub>b</sub> E. Hn. B <sub>b</sub> P Hn. A D <sub>b</sub> remains from previous chord
57	101-102	m2	P3, C(D)	E, A#, D, G#, C#, F#	Hn. F P Hn. F# Fl. D <sub>b</sub> C Fl. D Hp. E <sub>b</sub> P Hp. F <sub>b</sub> Hn. A P Hn. A# A <sub>b</sub> remains from previous chord
58	103-104	M7	P2, S(G#), C(C)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cello C# C Cello C Vla. F# P Vla. F Vc. E P Vc. E <sub>b</sub> Vln. G# S Vln. G & Fl. A A# is deleted
59	105	m6	P1	B, E#, A, D#, G#, C#	Vln. G P Vln. G# B has no transformation
60	106	TT		F, B, E <sub>b</sub> , A, <del>D, G</del>	
61	107-108	m3	P3	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Hn. D# P Hn. D Fl. A P Fl. B <sub>b</sub> Hn. F P Vln. G <sub>b</sub> A <sub>b</sub> & C has no transformations
62	109	m6	P3, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Fl. B <sub>b</sub> P Fl. B Hn. G <sub>b</sub> P Hn. G Vla. D C Vla. E <sub>b</sub> Bsn. A <sub>b</sub> P 8va Cl. A
63	110	TT	P1	B, E#, A, D#, G#, <del>C#</del>	Hn. G P Hn. G#
64	111-112	TT	P1, C(D)	F, B, E <sub>b</sub> , A, D, G	Hn. G# P Hn. G Hn. E <sub>b</sub> C Hn. D
65	113-114	m6	P1	C#, Fx, B, E#, A#, D#	Bsn. D P Bsn. D <sub>b</sub>

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
66	115	d7	P1, S(E <sub>b</sub> ), C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Hn. E <sub>b</sub> S Hn. D & Vla. E Hn. G C Hn. A <sub>b</sub> Cl. B P E. Hn. C B <sub>b</sub> has no transformation
67	116	m3	P3	C#, Fx, B, E#, A#, D#	Vla. E P Vla. E <sub>b</sub> Hn. D P Hn. C# E. Hn. C P E. Hn. C <sub>b</sub> E# remains from previous chord
68	117	d7	P3, C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Hp. E <sub>b</sub> P Hp. E Cl. D <sub>b</sub> P Cl. D Cl. C <sub>b</sub> P Ob. C Hn. G C Hn. A <sub>b</sub>
69	118	M6	P3, C(F)	G, C#, F, B, E, A	Picc. E C Picc. F Ob. C P Ob. B Cl. D P Cl. C# Cl. A <sub>b</sub> P Cl. A B <sub>b</sub> is deleted
70	119	M3	P2	B, E#, A, D#, G#, C#	Cl. D P Cl. D <sub>b</sub> Hn. G P Hp. G#
71	120	m3	P2, S(E#)	D, G#, C, F#, B, E	Cl. D# P Cl. D Fl. C# P Fl. C Hp./Vln. E# S Vln. F# & Bsn. E
72	121	M6	P3, C(A)	B, E#, A, D#, G#, C#	Cl. D P Cl. E <sub>b</sub> B. Cl. F# P B. Cl. F Cl. C P Ob. C# Ob. G# C Vln. A E is deleted
73	122	d7	P1, S(C#), C(G <sub>b</sub> )	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Fl. E# C Fl. G <sub>b</sub> Ob. C# S Ob. C & Pno. D Cl. A P Cl. B <sub>b</sub>
74	123	M6	P1, S(B <sub>b</sub> ), C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Vla./Cl. B <sub>b</sub> S Cl. B & Vla. A Pno. D C Hp. E <sub>b</sub> Fl. G <sub>b</sub> P E. Hn. G
75	124	TT	P2	B, E#, A, D#, G#, C#	E. Hn. D P Bsn. C# E. Hn. G P Ob. G#
76	125	TT	P2	F, B, E <sub>b</sub> , A, D, G	Ob. G# P E. Hn. G Bsn. C# P E. Hn. D
77	126	TT	P1, C(G#)	B, E#, A, D#, G#, C#	E. Hn. D P Bsn. C# Vla. A C Vla. G# G is deleted
78	127-129	TT	P1	F, B, E <sub>b</sub> , A, D, G	Bsn. G# P Bsn. G D has no transformation

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
79	129b	m3		A $\flat$ , D, G $\flat$ , C, <del>F, B<math>\flat</math></del>	A $\flat$ & G $\flat$ have no transformations
80	129c	M6	P2	F, B, E $\flat$ , A, <del>D, G</del>	Vln. D P Vln. E $\flat$ Vla G $\flat$ P Vla. A F has no transformation
81	129d	m3	P1	A $\flat$ , <del>D</del> , G $\flat$ , C, <del>F, B<math>\flat</math></del>	Vln. E $\flat$ P Vln. E G $\flat$ & A $\flat$ have no transformations
82	130	P4	P3	E $\flat$ , A, D $\flat$ , <del>G, C</del> , F	w/o Luce Fl. E P Fl. F Fl. C P F. D $\flat$ Vla G $\flat$ P Vla. A E $\flat$ has no transformation
83	130b	P4	P2	A $\flat$ , D, G $\flat$ , C, <del>F, B<math>\flat</math></del>	Fl. D $\flat$ P Fl. D Vln. F P Vln. G $\flat$ C & G $\flat$ have no transformations
84	130c	M6	P2, C(E $\flat$ )	F, B, E $\flat$ , A, D, G	Fl. G $\flat$ P Fl. G Fl. D C Fl. E $\flat$ Vc. A $\flat$ P C. Bsn. A F & B have no transformations C is deleted
85	131	M6	P1, S(G), C(C)	D, G $\sharp$ , C, F $\sharp$ , B, E	Vc. B C Vc. C Pno. G S Pno. G $\sharp$ & Pno. F $\sharp$ Pno E $\flat$ P 8va Pno. E
86	132	TT	P2	A $\flat$ , <del>D</del> , G $\flat$ , C, F, B $\flat$	Hn. E P Hn. F Cl. B P Cl. B $\flat$
87	133-134	M6	P4	F, B, E $\flat$ , A, D, G	Cl. B $\flat$ P Cl. A Hn. G $\flat$ P Hn. G Pno. C P Pno. B Pno. F $\flat$ P Pno. E $\flat$ D has no transformation
88	134b	P4	P3	B $\flat$ , E, A $\flat$ , D, G, C	Vc. E $\flat$ P Vc. E Vc. A P Vc. A $\flat$ D.B. B P D.B. B $\flat$ C has no transformation
89	135	M6	P3, C(F)	G, C $\sharp$ , F, B, E, A	D.B. D P Hp. C $\sharp$ Pno. B $\flat$ P Pno. 8va B Pno. E C Pno. F Pno. A $\flat$ P 8va Pno. A
90	136	TT	P2	C $\sharp$ , <del>F<math>\sharp</math></del> , B, E $\sharp$ , A $\sharp$ , D $\sharp$	E. Hn. E P E. Hn. E $\flat$ Hn. A P Hn. B $\flat$

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
91	137-138	d7	P3	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Cello E <sub>b</sub> P Cello D Vln. C <sub>b</sub> P Vln. C Pno. F P Pno. E G & A <sub>b</sub> have no transformations
92	139-142	m6	P2	F#, B#, E, A#, D#, G#	Pno. D P Pno. D# Pno. G P 8va Pno. F#
93	143-144	M7	P3, C(D)	F, B, E <sub>b</sub> , A, D, G	Bsn. A# P Bsn. A Hn. G# P Hn. G Pno. D# C Pno. D D.B. F# P Vc. F B remains from previous chord
94	144b	M6	P2	D, G#, C, F#, B, E	w/o Luce E. Hn. G P E. Hn. F# Vln. E <sub>b</sub> P Vln. E C & G# have no transformations
95	145	m6	P1	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	follows voice 2 of Luce Bsn. F# P Bsn. G B <sub>b</sub> has no transformation
96	146	M2	P1, C(A)	C, F#, B <sub>b</sub> , E, A, D	Vc. F P Vc. F# Bsn. B <sub>b</sub> C Bsn. A
97	147-148	M7	P3, C(G#)	B, E#, A, D#, G#, C#	Vc. F# P Vc. E# Cl. A C Cl. G# Bsn. E P Bsn. D# Vln. D P Vln. C# B has no transformation
98	148b	d7	P2	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Vln. B P Vln. B# Hn. E# P through a chromatic descent to Hn. D G <sub>b</sub> has no transformation
99	149-152	m3	S(D), C(A)	B, E#, A, D#, G#, C#	Hn. D S Hn. C# & Hn. D# Vln. G# C 8vb Vln. A B has no transformation
100	153	m2	P2, C(B <sub>b</sub> )	<del>C, F#, B<sub>b</sub></del> , E, A, D	w/o Luce Pno. C# P Pno. D Pno. D# P Pno. E Pno. A C Pno. B <sub>b</sub> G# moves to A B moves to B <sub>b</sub>

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
101	153b	TT	P2	F#, B#, E, A#, D#, G#	w/o Luce Pno. D P Pno. D# Pno. A P Pno. G# B# & F# have no transformations
102	154	TT	P2	<del>C, F#</del> , B $\flat$ , E, A, D	w/o Luce Pno. D# P Pno. D Pno. G# P Pno. A
103	154b	TT	P2	F#, B#, E, A#, D#, G#	w/o Luce Pno. A P Pno. G# Pno. D P Pno. D# B# & F# have no transformations
104	155-156	TT	P2	C, F#, B $\flat$ , E, A, D	w/o Luce Pno. G# P Pno. A Pno. D# P Pno. D
105	157-158	M7	P3, C(G#)	B, E#, A, D#, G#, C#	Cl. E P Cl. D# Vc. C P Vc. B Pno. D P Pno. C# Pno. A C Pno. G# E# has no transformation
106	159	m2	P2, S(B)	C, F#, B $\flat$ , E, A, D	w/o Luce Hn. B S Hn. B $\flat$ & Hn. C Pno. E# P Pno. F# Pno. D# P Pno. D C# is deleted E remains from previous chord
107	159b	TT	P2	F#, B#, E, A#, D#, G#	w/o Luce Pno. D P Pno. D# Pno. A P Pno. G#
108	160	TT	P2	C, F#, B $\flat$ , E, A, D	w/o Luce Pno. G# P Pno. A Pno. D# P Pno. D
109	160b	TT	P2	F#, B#, E, A#, D#, G#	w/o Luce Pno. D P Pno. D# Pno. A P Pno. G#
110	161-162	TT	P2	C, F#, B $\flat$ , E, A, D	Vln. D# P Vln. D Vln. G# P Vln. A
111	163-164	M7	P2, S(D), C(G#)	B, E#, A, D#, G#, C#	Vln. D S Vln. D# & Hp. C# Vln. A C Vln. G# Vc. C P Vc. B Hp. F# P Vln. E#

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
112	165-166	m2	P4, C(B <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	Vc. B P Vc. C Vln. E# P Vln. F# Fl. C# P Fl. D Cl. D# P Cl. E Hp. A C Hp. B <sub>b</sub> G# moves to A
113	167-168	M7	P2, S(D), C(G#)	B, E#, A, D#, G#, C#	Vc. C P Vc. B Vln. F# P Vln. E# Vln. D S Vln. D# & Hp. C# Vln. A C Vln. G# E remains from previous chord B <sub>b</sub> moves to A
114	169-172	m2	P2, S(D#), C(B <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	Vln. E# P Vln. F# Pno. B P Pno. C Pno. A C Pno. B <sub>b</sub> Pno. D# S Pno. E & Vln. D G# moves to A C# moves to D
115	172b	M2	P2	D, G#, C, F#, B, E	Hn. A P Hn. G# Vln. B <sub>b</sub> P Vln. B
116	173	M6	P2, C(A)	B, E#, A, D#, G#, C#	Hn. G# C Hn. A Pno. D P Pno. D# Pno. F# P Pno. E# C# has no transformation
117	173b	m3	P3	D, G#, C, F#, B, E	Pno. D# P Pno. D Pno. E# P Pno. F# Pno. B P Pno. C E remains from previous chord
118	174-177	M6	P3, C(A)	B, E#, A, D#, G#, C#	Pno. G# C Pno. A Pno. D P Pno. D# Pno. F# P Pno. E# Pno. B# P Pno. C# B has no transformation
119	177b	m3	P1	D, G#, C, <del>F#</del> , B, E	Ob. D# P Ob. E Transition
120	177c- 180	M6	P1, C(G#)	B, E#, A, D#, G#, C#	Fl. G# C Fl. A Ob. E P Ob. E# Same chord as before the transition
121	181-182	TT	P2	F, B, E <sub>b</sub> , A, D, G	Pno. C# P Pno. D Pno. G# P Pno. G

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
122	182b	M6	P3	D, G#, C, F#, B, E	E. Hn. G P. E. Hn. F# Vln. E, P Vln. E Bsn. A P 8va Hn. A, C has no transformation
123	183	m6	P1	B, E, A, D, G, C	B, is for the whole measure w/o Luce for 2 beats Bsn. F# P Bsn. G B, has no transformation
124	184	M2	P1, C(A)	C, F#, B, E, A, D	Vla. B, C Vla. A Bsn. F P Bsn. F#
125	185	m7	P1	B, E, A, D, G, C	w/o Luce Vla. A P Vla. A, G has no transformation
126	186-196	M2	P1, C(A)	C, F#, B, E, A, D	Bsn. B, C Bsn. A Bsn. F P Bsn. F#
127	196b	TT	P2	F#, B#, E, A#, D#, G#	w/o Luce Pno. A P Pno. G# Pno. D P Pno. D#
128	196c-198	TT	P2	C, F#, B, E, A, D	Pno. G# P Pno. A Pno. D# P Vc. D
129	199-200		P1	C, F#, B, E, A, D & F#, B#, E, A#, D#, G#	F# is w/o Luce Pno. D P Pno. D#
130	201			C, F#, B, E, A, D	
131	202-206	m6	P1, C(F)	A, D, G, C, F, B,	Hn. A P Hn. A, Tpt. F# C Tpt. F
132	206b	TT	P2	D, G#, C, F#, B, E	w/o Luce Pno. B, P Pno. B Pno. F P Pno. E
133	206c-208	TT	P2	A, D, G, C, F, B,	Pno. E P Pno. F Pno. B P Pno. B,
134	209-210	TT	P1	A, D, G, C, F, B, & D, G#, C, F#, B, E	D is w/o Luce Pno. B, P Pno. B
135	211	TT		A, D, G, C, F, B,	
136	212-214	M6	S(B), C(E)	F, B, E, A, D, G	Vln./Hn. B, S Hn. B & Vln. A Bsn. D C Bsn. 8va E, G has no transformation
137	215	M6	P3	D, G#, C, F#, B, E	Vln. G P Vln. F# Vln. A P Vln. G# Vln. F P Vln. E C has no transformation



Chord #	Measure #	Interval	Transformation	MC Notes	Comments
138	216	m3	P2, S(G#)	F, B, E <sub>b</sub> , A, D, G	Vln. E P Vln. E <sub>b</sub> Vln. F# P Vln. F Fl./Vln. G# S Vln. G & Cl. A
139	217	M6	P1, S(G), C(C)	D, G#, C, F#, B, E	Hp./Hn. G S Hn. F# & Hp. G# Hn. B C Hn. C Cl. E <sub>b</sub> P Ob. E
140	218	M6	P1, S(E)	B, E#, A, D#, G#, C#	Ob. E S Ob. D# & Pno. E# Cl. C P Cl. C#
141	219	M3	P1	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cl. G <sub>b</sub> P Cl. G C has no transformation
142	220	m3	P3	F#, B#, E, A#, D#, G#	Vln. F P Vln. E Vln. A P Vln. A# Vln. F P Vln. F#
143	221	d7	P3, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Vc. B <sub>b</sub> P Vc. A Vln. C C Vln. D <sub>b</sub> Cl. F# P Cl. G Vln. E P Vln. F
144	222	m3	P1	F#, B#, E, A#, D#, G#	Cl. A P Cl. B <sub>b</sub> G#, E & F# have no transformations
145	223-224	m3	P2, S(B#)	A, D#, G, C#, F#, B	Vc. B <sub>b</sub> P Vc. A Vla. A, P Vla. G Ob./Vln. B# S Vln. B & Ob. C# E is deleted
146	225-226	M6	P3	F#, B#, E, A#, D#, G#	Ob. G P Ob. G# Fl. B P Fl. B# Bsn. A P 8va Bsn. A# E has no transformation
147	227-228	m3	P3	A, D#, G, C#, F#, B	Ob. G# P Ob. G Fl. B <sub>b</sub> P Fl. B Cl. D P Cl. C# A has no transformation
148	229-231	m6	P2	F, B, E <sub>b</sub> , A, D, G	Fl. F# P 8vb Fl. F Picc. C# P Picc. D
149	232	TT	P2	B, E#, A, D#, G#, C#	Cl. D P Cl. C# Fl. G P Fl. G#
150	233-237	TT	P2	F, B, E <sub>b</sub> , A, D, G	Fl. G# P Fl. G Cl. C# P Cl. D
151	238	TT	P2	B, E#, A, D#, G#, C#	Hn. G P Hn. G# Hn. D P Hn. C#

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
152	239-240	d7	P3, C(G <sub>b</sub> )	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Hn. C# P Hn. C Tbn. D# P Tbn. D Vln. A P Vln. B <sub>b</sub> D.B. E# C D.B. G <sub>b</sub> B is deleted
153	241-242	P4	P2, S(D)	C#, Fx, B, E#, A#, D#	Vln./Bsn. D S Bsn. D <sub>b</sub> & Vln. E <sub>b</sub> Hn. C P Hn. B Tbn. A <sub>b</sub> P Tbn. G G <sub>b</sub> is deleted
154	243-244	d7	P3, C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Bsn. G C Bsn. A <sub>b</sub> Hn. D <sub>b</sub> P Hn. D Vln. F P 8vb Pno. E Tpt. C <sub>b</sub> P Pno. C
155	245-246	m3	S(C), S(E)	C#, Fx, B, E#, A#, D#	Pno. C S Vln. D <sub>b</sub> & Ob. C <sub>b</sub> Pno. E S Vln. E <sub>b</sub> & Vln. F
156	247-249	d7	P1, S(E <sub>b</sub> ), C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Ob. B P Ob. C Bsn. G C Bsn. A <sub>b</sub> Vln./Cl. E <sub>b</sub> S Cl. E & Vln. D
157	250	TT	P2	E, A#, D, G#, C#, F#	Fl. C P Fl. C# Fl. G P Fl. F#
158	251-255	TT	P2	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Fl. F# P Fl. G Fl. C# P Fl. C
159	256	TT	P2	E, A#, D, G#, C#, F#	Fl. C P Fl. C# Fl. G P Fl. F#
160	257-258	M6	P4	C#, Fx, B, E#, A#, D#	Ob. D P Ob. E <sub>b</sub> Hn. F# P Hn. F Hn. G# P Hn. G Hn. A# P Hn. C <sub>b</sub> E is deleted
161	259-260	P4	P2, S(G)	F#, B#, E, A#, D#, G#	Hn./C. Bsn. G S C. Bsn. Gb & Hn. G# Bsn. D <sub>b</sub> P Bsn. C Vln. F P Hp. E
162	261-262	m3	P3, C(G)	A, D#, G, C#, F#, B	Ob. B <sub>b</sub> P Ob. B C. Bsn. G <sub>b</sub> C. Bsn. G Hn. A <sub>b</sub> P Hn. A Ob. C P Ob. C#
163	263	TT	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cl. B P Cl. C Cl. F# P Cl. F

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
164	264	M6	P3, C(B <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	C is voice 2 w/ B <sub>b</sub> in voice 1 Fl. E <sub>b</sub> P Fl. D E. Hn. F P E. Hn. E Hn. A C Hn. B <sub>b</sub> Vla. G P Vla. F#
165	265-266	m7	P2	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Vla. F# P Vla. G Tpt. A P Tpt. A <sub>b</sub>
166	267	TT	P2	E, A#, D, G#, C#, F#	Ob. C P Ob. D <sub>b</sub> E. Hn. G P E. Hn. F#
167	268	M6	S(G <sub>b</sub> ), C(C <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Hn. A# C Hn. C <sub>b</sub> Ob. G <sub>b</sub> S Ob. G & Hn. F D# has no transformation
168	269	M3	P1, C(D)	F, B, E <sub>b</sub> , A, D, G	Vc. A <sub>b</sub> P Vc. A Ob. E <sub>b</sub> C Ob. D
169	270	M6	P2, C(C)	D, G#, C, F#, B, E	Fl. F P Fl. E E. Hn. G P E. Hn. G# Fl. B C Fl. C F# has no transformation
170	271	M3	P1, C(E <sub>b</sub> )	F#, B#, E, A#, D#, G#	E. Hn. E C E. Hn. E <sub>b</sub> Vc. A P Vc. B <sub>b</sub>
171	272-273	d7	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Fl. A <sub>b</sub> P Fl. A Vln. G <sub>b</sub> P Vln. G F & D <sub>b</sub> has no transformation
172	274-275	m3	P1, S(F)	F#, B#, E, A#, D#, G#	Ob. A P Ob. G# Vln. F S Vln. E & Hp. F# A# remains from previous chord
173	276	d7	P2, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Fl. C C Fl. D <sub>b</sub> Vln. F <sub>b</sub> P Vln. F Vln. A <sub>b</sub> P Vln. G
174	277-280	M3	P3	G, C#, F, B, E, A	E. Hn. C P Cl. B Ob. F P Cl. E Glk. B <sub>b</sub> P Hp. A
175	281-292	M6	P2, C(D)	E, A#, D, G#, C#, F#	Fl. A P Fl. A# Tbn. C# C Tbn. D Tbn. G P Tbn. G# F# has no transformation
176	293-300	P4	P1, C(G)	A, D#, G, C#, F#, B	Ob. F# C Ob. G Vln. B# P Vln. B A remains from previous chord D# has no transformation

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
177	301-303	m6	P1	F, B, E <sub>b</sub> , A, D, G	Picc. C# P Picc. D F has no transformation
178	304	m6	P1	C#, Fx, B, E#, A#, D#	Cel. A P Cel. B <sub>b</sub>
179	305-308			C#, Fx, B, E#, A#, D# & F, B, E <sub>b</sub> , A, D, G & A, D#, G, C#, F#, B	
180	309		P3	D, G#, C, F#, B, E	Vln. A P Vln. G# Vln. D <sub>b</sub> P Vla. C Pno. E <sub>b</sub> P Fl. E
181	310	m3	P3	F, B, E <sub>b</sub> , A, D, G	Fl. E P Fl. E <sub>b</sub> Hp. G# P Hp. G Hn. F# P Cl. F A remains from previous chord
182	311	M6	P3, C(C)	D, G#, C, F#, B, E	Fl. E <sub>b</sub> P Ob. E Cl. F P Cl. F# Hn. B C Hn. C Hp. G P Vln. G#
183	312	M6	P3, C(A)	B, E#, A, D#, G#, C#	Picc. G# C Picc. A Ob. E P Ob. D# Vln. C P Pno. C# Cl. F# P Cl. F
184	313	TT	P1	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cl. G <sub>b</sub> P Cl. G C has no transformation
185	314	m3	P3	F#, B#, E, A#, D#, G#	Fl. F P Fl. F <sub>b</sub> Hp. A P Hp. B <sub>b</sub> Cl. G P Cl. F# G# has no transformation
186	315	d7	P3, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Fl. F <sub>b</sub> P Fl. F Ob. C C Ob. D <sub>b</sub> Cl. F# P Cl. G B. Cl. B <sub>b</sub> P B. Cl. A G# deleted
187	316	M6	P3, C(B <sub>b</sub> )	C, F#, B <sub>b</sub> , E, A, D	Picc. A C Picc. B <sub>b</sub> Ob. F P Ob. E Vln. G P Vln. F# Vln. D <sub>b</sub> P Vln. D
188	317	M6	S(D), C(G)	A, D#, G, C#, F#, B	Vln. F# C Vln. G Cl. D S Cl. D# & Cl. C# B has no transformation
189	318	TT	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	E. Hn. B P Ob. C E. Hn. F# P Bsn. F
190	319	TT	P2	A, D#, G, C#, F#, B	Ob. C P E. Hn. B Bsn. F P E. Hn. F#

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
191	320	TT	P1, C(C)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	E. Hn. F# P Bsn. F E. Hn. D# C Bsn. C
192	321-323	TT	P2	A, D#, G, C#, F#, B	Bsn. C P Cl. B Bsn. F P Cl. F#
193	323b	m3		C, F#, B <sub>b</sub> , E, <del>A, D</del>	C, B <sub>b</sub> & E has no transformations
194	323c	M6	P1	A, <del>D#</del> , G, C#, <del>F#</del> , B	Vln. F# P Vln. G C# & A have no transformations
195	323d	m3	P1	C, <del>F#</del> , B <sub>b</sub> , E, <del>A, D</del>	Vln. G P Vln. G# C, B <sub>b</sub> & E have no transformations
196	324	M6	P2	A, <del>D#</del> , G, C#, <del>F#</del> , B	Vln. G# P Vln. A Fl. E P Fl. F G & C# have no transformations
197	324b	m3	P2	C, F#, B <sub>b</sub> , E, <del>A, D</del>	Vln. A P Vln. B <sub>b</sub> Fl. F P Fl. F# C & E have no transformations
198	324c	M6	P2, C(G)	A, D#, G, C#, F#, B	Fl. B <sub>b</sub> P Fl. B Fl. F# C Fl. G Vc. C P Vc. D# A & C# have no transformations
199	325	M6	P2, C(E)	F#, B#, E, A#, D#, G#	Vln. D# C Hp. E Cl. C# P Fl. B# Cl. G P Fl. G# A# has no transformation
200	326	TT	P2	C, F#, B <sub>b</sub> , E, A, D	Fl. D# P Fl. D Ob. G# P Ob. A
201	327-328	M6	P3, C(G)	A, D#, G, C#, F#, B	Ob. B <sub>b</sub> P Ob. B E. Hn. F# C Cl. G Hn. D P Hn. C# Vln. E P Vln. D# C is deleted
202	328b	TT	P1, C(C)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Tpt. F# P Tpt. F Tpt. C# C Tpt. C Mostly a transition
203	328c	TT		A, D#, G, C#, F#, B	Same chord as before the transition chord

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
204	328d	P4	P3	D, G#, C, F#, B, E	Cl. C# P Cl. C Cl. G P Cl. G# Bsn. D# P Bsn. D E has no transformation
205	329-333	M6	P1, C(A)	B, E#, A, D#, G#, C#	Pno. C P Pno. C# Pno. G# C Pno. A Pno. E S Pno. D# & Pno. E#
206	334	TT	P2	F, B, Eb, A, D, G	Fl. C# P Fl. D Ob. G# P Hn. G
207	335	M6	P3	D, G#, C, F#, B, E	Ob. Eb P Ob. E Hn. G P Hn. F# Vln. A P Vln. G# C remains from previous chord
208	336	TT	P1, C(Bb)	Ab, D, Gb, C, F, Bb	Tpt. F# P Tpt. F Tpt. B C Tpt. Bb Mostly a transition
209	336b	TT		D, G#, C, F#, B, E	Same chord as before the transition chord
210	336c	P4	P3	G, C#, F, B, E, A	Cl. F# P Cl. F Cl. C P Cl. C# Bsn. G# P Bsn. G A has no transformation
211	337-341	M6	P2, C(D)	E, A#, D, G#, C#, F#	Pno. F P Pno. F# Pno. C# C Pno. D Pno. A P Pno. A# G# has no transformation
212	342	TT	P2	Bb, E, Ab, D, G, C	E. Hn. C# P E. Hn. C Picc. F# P Picc. G
213	343	m6	P1	F#, B#, E, A#, D#, G#	Tpt. D P Tpt. D# F# has no transformation
214	344	TT	P2	C, F#, Bb, E, A, D	Ob. Ab P Ob. A Cello D# P Cello D
215	345-350	m3	P3	Eb, A, Db, G, C, F	Pno. F# P Pno. G Tpt. D P Tpt. Db Cello E P Cello F Eb has no transformation
216	351	M2	P2, S(A)	F#, B#, E, A#, D#, G#	Ob./Picc. A S Picc. Bb & Ob. Ab Picc. F P Picc. E Bsn. G P Bsn. F#
217	352	TT	P2	C, F#, Bb, E, A, D	Fl. Ab P Fl. A Cl. D# P Cl. D

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
218	353	m6	P2	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Fl. E P Fl. F Hp. A P Hp. A <sub>b</sub>
219	354	TT	P2	D, G <sup>#</sup> , C, F <sup>#</sup> , B, E	Hn. F P Hn. E Cel. B <sub>b</sub> P Cel. B
220	355-360	m3	P2, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Bsn. D C Bsn. E <sub>b</sub> Hp. G <sup>#</sup> P Hp. A Fl. F <sup>#</sup> P Fl. G F has no transformation
221	361-363	m3	P2, C(G <sub>b</sub> )	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Ob. C <sup>#</sup> P Ob. C E. Hn. A P E. Hn. B <sub>b</sub> Cl. F C Cl. G <sub>b</sub> A <sub>b</sub> has no transformation
222	363b-364	m6	P2, S(A), C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Fl. B <sub>b</sub> & Fl. G <sub>b</sub> S Fl. A Bsn. D C Bsn. E <sub>b</sub> Hn. C P Hn. B Tbn. G <sub>b</sub> P Tbn. G A <sub>b</sub> is deleted
223	365-367	m3	P2, C(G <sub>b</sub> )	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Vla. F C Vla. G <sub>b</sub> Fl. A P Fl. B <sub>b</sub> Hn. B P Tpt. C A <sub>b</sub> has no transformation
224	367b-370	M6	P2, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Cl. B <sub>b</sub> P Cl. A Bsn. D C Bsn. E <sub>b</sub> Hn. C P Hn. B G has no transformation
225	371	M6	P1, C(C)	D, <del>G</del> <sup>#</sup> , C, F <sup>#</sup> , B, <del>E</del>	Bsn. B C Bsn. C Hn. F P Hn. F <sup>#</sup>
226	371b	m3	P1	F, B, E <sub>b</sub> , A, <del>D, G</del>	Hn. D P Hn. E <sub>b</sub> F & A have no transformations
227	372-376	M6	P1, C(C)	D, G <sup>#</sup> , C, F <sup>#</sup> , B, E	Bsn. B C Bsn. C Hn. D <sup>#</sup> P Hn. E F <sup>#</sup> & D have no transformations
228	377-384	M6	P1, S(E), C(A)	B, E <sup>#</sup> , A, D <sup>#</sup> , G <sup>#</sup> , C <sup>#</sup>	Pno. E S Pno. D <sup>#</sup> & E <sup>#</sup> Pno. G <sup>#</sup> C Pno. A Hn. C P Hn. C <sup>#</sup>
229	385-388	d7	P4	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Pno. D <sup>#</sup> P Pno. D Pno. C <sup>#</sup> P Pno. C Pno. A P Pno. B <sub>b</sub> Pno. F P Pno. G <sub>b</sub>
230	389	TT	P2	D, G <sup>#</sup> , C, F <sup>#</sup> , B, E	Fl. B <sub>b</sub> P Fl. B Fl. F P Fl. E

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
231	390	TT	P2	A $\flat$ , D, G $\flat$ , C, F, B $\flat$	Cl. B P Cl. B $\flat$ E. Hn. E P E. Hn. F
232	391	M6	P1, S(G $\flat$ )	F, B, <del>E<math>\flat</math></del> , A, <del>D</del> , G	Vc. G $\flat$ S Vc. F & Vln. G Vln. B $\flat$ P Vln. B
233	391b	M6	P1, S(G)	D, G $\sharp$ , C, F $\sharp$ , <del>B</del> , <del>E</del>	Vln. B P Vln. C Vln. G S Vln. G $\sharp$ & Vla. F $\sharp$ D has no transformation
234	392	M6	P3	B, E $\sharp$ , A, <del>D<math>\sharp</math></del> , <del>G<math>\sharp</math></del> , C $\sharp$	Vln. C P Vln. C $\sharp$ Vln. G $\sharp$ P Vln. A Vla. F $\sharp$ P Vla. E $\sharp$ B has no transformation
235	392b	d7	P1, S(C $\sharp$ )	A $\flat$ , D, G $\flat$ , C, <del>F</del> , <del>B<math>\flat</math></del>	Vln. C $\sharp$ S Vln. D & Vln. C Vla. E $\sharp$ P Vla. F $\sharp$ A $\flat$ has no transformation
236	392c	M6	P4	F, B, E $\flat$ , A, <del>D</del> , <del>G</del>	Vln. D P Vln. D $\sharp$ Vln. C P Vln. B Vc. A $\flat$ P 8va Vla. A Vla. F $\sharp$ P 8vb Vc. F
237	393-397	M6	P3, C(C)	D, G $\sharp$ , C, F $\sharp$ , B, E	Hn. D $\sharp$ P Hn. E Vln. B C Vln. C Vc. F P 8va Vla. F $\sharp$ Vla. A P 8va Pno. G $\sharp$ D has no transformation
238	398	TT	P2	A $\flat$ , D, G $\flat$ , C, F, B $\flat$	Pno. B P Pno. B $\flat$ Pno. E P Pno. F
239	399	TT	P2	D, G $\sharp$ , C, F $\sharp$ , B, E	Pno. B $\flat$ P Pno. B Pno. F P Pno. E
240	400	TT	P1	A $\flat$ , D, G $\flat$ , C, <del>F</del> , B $\flat$	Pno. B P Pno. B $\flat$
241	401	TT	P1	D, G $\sharp$ , C, F $\sharp$ , B, E	Pno. B $\flat$ P Pno. B E remains from previous chord
242	402-405	TT	P1	A $\flat$ , D, G $\flat$ , C, F, B $\flat$	Pno. B P Pno. B $\flat$ F has no transformation
243	405b	M6	P2	F, B, <del>E<math>\flat</math></del> , A, <del>D</del> , G	Vln. C P Vln. B Vla. G $\flat$ P Vln. G
244	405c	M6	P1, S(G)	D, G $\sharp$ , C, F $\sharp$ , <del>B</del> , <del>E</del>	Vln. B P Vln. C Vln. G S Vln. G $\sharp$ & Vla. F $\sharp$ D has no transformation
245	406	M6	P3	B, E $\sharp$ , A, <del>D<math>\sharp</math></del> , <del>G<math>\sharp</math></del> , C $\sharp$	Vln. C P Vln. C $\sharp$ Vln. G $\sharp$ P Vln. A Vla. F $\sharp$ P Vla. E $\sharp$ B has no transformation



Chord #	Measure #	Interval	Transformation	MC Notes	Comments
246	406b	d7	P1, S(C#)	A <sub>b</sub> , D, G <sub>b</sub> , C, <del>F, B<sub>b</sub></del>	Vln. C# S Vln. D & Vln. C Vla. E# P Vla. F# A <sub>b</sub> has no transformation
247	406c	M6	P4	F, B, E <sub>b</sub> , A, <del>D, G</del>	Vln. D P Vln. D# Vln. C P Vln. B Vc. A <sub>b</sub> P 8va Vla. A Vla. F# P 8vb Vc. F
248	407	M6	P3, C(C)	D, G#, C, F#, B, E	Hn. D# P Hn. E Vln. B C Vln. C Vc. F P 8va Vla. F# Vla. A P 8va Pno. G# D has no transformation
249	408	P4	P4	G, C#, F, B, E, A	Vla. F# P Vla. G Vc. D P D.B. C# Tpt. B <sub>b</sub> P Tpt. A Pno. E P Tpt. F
250	409	M6	P3, C(D)	E, A#, D, G#, C#, F#	Hn. A P Hn. G# Hn. C# C Hn. D Pno. B P Pno. A# Tpt. F P Vln. F# G is deleted
251	410	TT	P2	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	w/o Luce Pno. F# P Pno. G Pno. C# P 8va Pno. C
252	410b	M6	P2, C(F)	G, C#, F, B, E, A	w/o Luce Pno. B <sub>b</sub> P Pno. B Vln. D P 8vb Hn. C# Vc. E C D.B. F
253	411	M6	P1, S(G), C(D)	E, A#, D, G#, C#, F#	Hn. G S Hn. G# & Pno. F# Hn. B P Cl. A# Hn. C# C Pno. D
254	412	P4	P2, S(G#)	A, D#, G, C#, F#, B	Hn./Vla. G# S Vla. G & Hn. A Bsn. E P Bsn. D# Cl. A# P 8va Tpt. B
255	413	M6	P3, C(E)	F#, B#, E, A#, D#, G#	Hn. A P Hn. B <sub>b</sub> Hn. E <sub>b</sub> C Hn. E Vln. G P Vla. G# Tpt. B P Tpt. C
256	414	TT	P2	C, F#, B <sub>b</sub> , E, A, D	Pno. G# P Pno. A Pno. D# P Pno. D
257	414b	TT		F#, B#, E, A#, <del>D#, G#</del>	

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
258	414c	m3	P3, C(G)	A, D#, G, C#, F#, <del>B</del>	Pno. E P Hn. E <sub>↓</sub> Vc. F# C D.B. G Pno. B <sub>↓</sub> , P 8vb Hn. A Pno. C P 8vb Hn D <sub>↓</sub>
259	415	P5		E, <del>A#</del> , <del>D</del> , G#, <del>C#</del> , F#	E & G# have no transformations
260	415b	M2		F#, B#, E, A#, D#, G#	B#, A# & D# have no transformations
261	415c	d7	P2, C(D <sub>↓</sub> )	E <sub>↓</sub> , A, D <sub>↓</sub> , <del>G</del> , C, F	Vln. E P Vln. F E. Hn. A <sub>↓</sub> , P 8vb Cl. A Cl. B# C Cl. D <sub>↓</sub>
262	416	M3	P1	G, C#, F, B, E, A	E. Hn. C P Hn. B G & E have no transformations
263	416b	M7	P4, C(D#)	F#, B#, E, A#, D#, G#	B. Cl. G P B. Cl. F# Pno. B P Pno. A# Pno. C# P Pno. B# Pno. E C Pno. D# Pno. A P Pno. G# F moves to E
264	416c	m3	P1, S(B#)	A, D#, G, C#, F#, B	Pno. G# P Pno. G Pno. B# S Pno. B & Pno. C# A has no transformation
265	417	m2	P4, C(A <sub>↓</sub> )	B <sub>↓</sub> , E, A <sub>↓</sub> , D, G, C	Bsn. A P Bsn. B <sub>↓</sub> Hn. B P Hn. C Hn. D# P Hn. E Hn. G C Hn. A <sub>↓</sub> Pno. C# P Pno. D F# moves to G
266	417b	M6	P1, C(F)	G, C#, F, <del>B</del> , E, A	Cl. E C Cl. F Vln. A <sub>↓</sub> , P Vln. A C# has no transformation
267	418	M3	P1	B, E#, A, D#, G#, C#	E. Hn. E P E. Hn. D# G# & B have no transformations
268	418b	M7	P4, C(G)	B <sub>↓</sub> , E, A <sub>↓</sub> , D, G, C	Vc. B P Vc. B <sub>↓</sub> Vla. C# P Vla. C Pno. D# P Pno. D Pno. E# P Pno. E Pno. G# C Pno. G A moves to A <sub>↓</sub>
269	418c	m3	S(E), S(C)	C#, Fx, B, E#, A#, D#	Pno. E S Pno. E# & Pno. E <sub>↓</sub> Vla/Pno. C S Pno. B &

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
					Vc. D <sub>b</sub>
270	419	m6	P1	A, D#, G, C#, F#, B	Pno. F P Pno. F# A has no transformation
271	420	P4	P2, S(C#)	D, G#, C, F#, B, E	D.B. A P D.B. G# Tpt. F P Tpt. E Pno./Vc. C# S Vla. D & Vln. C
272	421	M6	P3, C(A)	B, E#, A, D#, G#, C#	Hn. D P Hn. D# Hn. G# C Hn. A Vln. E P Vln. E# Vln. C P Vla. C#
273	422	TT	P2	F, B, E <sub>b</sub> , A, D, G	Pno. G# P Pno. G Pno. C# P Pno. D
274	422b	TT		B, E#, A, D#, <del>G#, C#</del>	
275	422c	m3		D, G#, C, F#, B, <del>E</del>	D, G#, C & F# have no transformations
276	423	M6	P2, C(A)	B, E#, A, D#, G#, C#	Hn. D P Hn. D# Hn. G# C Hn. A Hn. F# P Pno. E# C# has no transformation
277	424	P4	P2	E, A#, D, G#, C#, F#	Hn. A P Hn. B <sub>b</sub> Pno. E# P Tpt. F# D & E have no transformations
278	425	M6	P2, C(C <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Ob. G# P Ob. G Hn. F <sub>b</sub> P Hn. F Hn. B <sub>b</sub> C Hn. C <sub>b</sub> D# has no transformation
279	426	TT	P1	G, C#, F, B, E, A	Pno. E <sub>b</sub> P Pno. E A has no transformation
280	426b	TT		C#, Fx, B, E#, <del>A#, D#</del>	
281	426c	m3	P1, C(D)	E, A#, D, G#, C#, <del>F#</del>	Vc. C# C D.B. D Vln. B P 8vb Hn B <sub>b</sub> E remains from previous chord G# has no transformation
282	427	M6	P3	C#, Fx, B, <del>E#</del> , A#, D#	Hn. F <sub>b</sub> P Hn. E <sub>b</sub> Hn. A <sub>b</sub> P Hn. G Hn. B <sub>b</sub> P Hn. C <sub>b</sub>
283	427b	d7	P2	B <sub>b</sub> , E, A <sub>b</sub> , <del>D#</del> , G, C	Cl. C <sub>b</sub> P Cl. C Cl. E <sub>b</sub> P Cl. E A <sub>b</sub> & B <sub>b</sub> have no transformations

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
284	428	M3	C(F#), C(B)	D, G#, C, F#, B, E	E. Hn. G C E. Hn. F# Vln. C C 8va Pno. B D has no transformation
285	428b	M7	P4, C(B <sub>b</sub> )	C#, Fx, B, E#, A#, D#	B. Cl. D P B. Cl. D <sub>b</sub> Pno. F# P Pno. F Pno. G# P Pno. G Pno. B C Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub> C moves to C <sub>b</sub>
286	428c	m3	P1, S(G)	E, A#, D, G#, C#, F#	Pno. G S Pno. G# & Pno. F# Pno. E <sub>b</sub> P Pno. D E has no transformation
287	429	m2	P4, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Bsn. E P Bsn. F Hn. F# P Hn. G Hn. A# P Hn. B Hn. D C Hn. E <sub>b</sub> Pno. G# P Pno. A C# moves to D
288	429b	M6	P2, C(C)	D, G#, C, F#, B, E	Cl. E <sub>b</sub> P Cl. E Cl. B C Cl. C Cl. G P Cl. G#
289	430	M3	P1	F#, B#, E, A#, D#, G#	E. Hn. B P E. Hn. B, D# & F# have no transformations
290	430b	M7	P4, C(D)	F, B, E <sub>b</sub> , A, D, G	B. Cl. F# P B. Cl. F Cl. C P Hn. B Cl. A <sub>b</sub> P Hn. G Pno. A# P Pno. A Pno. D# C Pno. D E moves to E <sub>b</sub>
291	430c	m3	P1, S(B)	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Pno./Hn. B S Hn. B <sub>b</sub> & Pno. C Hn. G P Hn. G <sub>b</sub> A <sub>b</sub> has no transformation
292	431	m2	P4, C(G)	A, D#, G, C#, F#, B	Bsn. A <sub>b</sub> P Bsn. A Hn. D P Hn. D# Hn. B <sub>b</sub> P Hn. B Pno. C P Pno. C# Vln. G <sub>b</sub> C Vln. G
293	431b	M6	P2, C(E)	F#, B#, E, A#, D#, G#	Cl. G P Cl. G# Cl. D# C Cl. E Cl. B P Cl. B#

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
294	432	M3	P1	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	E. Hn. D# P E. Hn. D B <sub>b</sub> & G have no transformations
295	432b	M7	P4, C(F#)	A, D#, G, C#, F#, B	B. Cl. B <sub>b</sub> P B. Cl. A Pno. D P Pno. C# Pno. E P Pno. D# Pno. G C Pno. F# Pno. C P Pno. B
296	432c	m3	P1, S(D#)	C, F#, B <sub>b</sub> , E, A, D	Hn. B P Hn. B <sub>b</sub> Pno. D# S Pno. E & Pno. D C has no transformation
297	433	m2	P4, C(C <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Bsn. C P Bsn. D <sub>b</sub> Hn. F# P Hn. G Hn. B <sub>b</sub> C Hn. C <sub>b</sub> Vln. D P Vln. E <sub>b</sub> Pno. E P Pno. F A moves to B <sub>b</sub>
298	433b	M7	P4, C(A)	C, F#, B <sub>b</sub> , E, A, D	Bsn. D <sub>b</sub> P Bsn. C Pno. F P Pno. E Pno. G P Pno. F# Pno. B <sub>b</sub> C Pno. A Pno. E <sub>b</sub> P Pno. D
299	433c	m3	P1, S(F#)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cl. D P Cl. D <sub>b</sub> Pno. F# S Pno. G & Pno. F E <sub>b</sub> has no transformation
300	434	m2	P4, C(D)	E, A#, D, G#, C#, F#	Ob. F P Ob. F# Cl. D <sub>b</sub> C Cl. D Cl. A P Cl. A# Pno. G P Pno. G# Hn. E <sub>b</sub> P Hn. E
301	434b	m3	P3	G, C#, F, B, E, A	Cl. F# P Cl. F Pno. G# P Pno. A Pno. A# P Pno. B G has no transformation
302	434c	m3	P3	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Cl. A P Cl. A <sub>b</sub> Cl. C# P Cl. C Pno. B P Pno. B <sub>b</sub>
303	435	m3	S(C), S(E)	C#, Fx, B, E#, A#, D#	Pno./Fl. C S Fl. B & Pno. C# Pno./Vla. E S Vla. F & Pno. D#
304	435b	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
305	435c	TT	P2	C#, Fx, B, E#, A#, D#	Pno. E P Pno. E <sub>b</sub> Pno. A P Pno. A#
306	436	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E
307	436b	TT	P2	C#, Fx, B, E#, A#, D#	Pno. E P Pno. E <sub>b</sub> Pno. A P Pno. A#
308	436c	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E
309	437	TT	P2	C#, Fx, B, E#, A#, D#	Pno. E P Pno. E <sub>b</sub> Pno. A P Pno. A#
310	437b	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E
311	437c	TT	P2	C#, Fx, B, E#, A#, D#	Pno. E P Pno. E <sub>b</sub> Pno. A P Pno. A#
312	438	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E
313	438b	TT	P2	C#, Fx, B, E#, A#, D#	Pno. E P Pno. E <sub>b</sub> Pno. A P Pno. A#
314	438c	TT	P2	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. A Pno. E <sub>b</sub> P Pno. E
315	439-440	TT	P2	C#, Fx, B, E#, A#, D#	Pno. A P Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub>
316	441-444	m6	P2	A, D#, G, C#, F#, B	B. Cl. B <sub>b</sub> P B. Cl. A Pno. F P Pno. F#
317	445-450	TT	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Ob. B P Ob. C Pno. F# P Pno. F
318	451	m3	P1, S(A), C(F <sub>b</sub> )	F#, B#, E, A#, D#, G#	Bsn. E <sub>b</sub> C Bsn. F <sub>b</sub> Hn. G P Hn. G <sub>b</sub> Fl./Bsn. A S 8va Bsn. B <sub>b</sub> & Fl. A <sub>b</sub>
319	452	m3	P2	A, D#, G, C#, F#, B	Alto C P Alto B Fl. B <sub>b</sub> P Hp. A C# remains from previous chord G has no transformation
320	453	P5	P3	E, A#, D, G#, C#, F#	Fl. A P Fl. B <sub>b</sub> Fl. F P Fl. E <sub>b</sub> Vln. G P Vln. A <sub>b</sub>
321	454	M7	P2, S(F <sub>b</sub> ), C(C)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Cl. B <sub>b</sub> P Cl. A Vln. A <sub>b</sub> P Vln. G Cello D <sub>b</sub> C Cello C Vln./Cl. F <sub>b</sub> S Cl. F & Vln. E <sub>b</sub>
322	455	M3	P1, C(E)	G, C#, F, B, E, A	Fl. A# P Fl. B Cello F C Cello E

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
323	456	m3	P2, S(A)	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Alto C# P Alto D Vc. C# P Vc. C Vla./Vln. A S Vln. A <sub>b</sub> & Vla. B <sub>b</sub>
324	457	M6	P3	G, C#, F, B, E, A	Vln. A <sub>b</sub> P Vln. A Alto D P Alto C# Vla. B <sub>b</sub> P Vla. B F has no transformation
325	458	M6	P3, C(D)	E, A#, D, G#, C#, F#	Fl. A P Fl. G# Cl. B P Cl. A# Alto C# C Alto D Vln. F P Vln. F#
326	459	m2	P3	F, B, E <sub>b</sub> , A, D, G	B. Cl. G# P B. Cl. G Bsn. F# P Bsn. F Hn. B <sub>b</sub> P Hn. C <sub>b</sub> E <sub>b</sub> has no transformation
327	460-467	m6	P1	C#, Fx, B, E#, A#, D#	C# remains from previous chord Vln. C <sub>b</sub> P Vln. B <sub>b</sub>
328	468-470	d7	P1, S(E <sub>b</sub> ), C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Org./Fl. E <sub>b</sub> S Fl. E & Org. D Fl. G C Fl. A <sub>b</sub> Vln. C <sub>b</sub> P Vln. C
329	471-473	TT	P2	E, A#, D, G#, C#, F#	Fl. C P Cl. C# Vln. G P Vln. F#
330	474-478	M6	P3, C(C <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Fl. F# P Fl. G Fl. A# C Fl. C <sub>b</sub> Fl. D P Fl. E <sub>b</sub> Bass E P Bass F G# is deleted
331	479	P4	P2, S(F)	F#, B#, E, A#, D#, G#	F# is voice 2 Fl. C <sub>b</sub> P Fl. C Vln. G P Vln. A <sub>b</sub> Bsn./Ob. F S Ob. F <sub>b</sub> & Bsn. G <sub>b</sub> C# is deleted
332	480-482	d7	P3, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Bsn. G <sub>b</sub> P Bsn. G Hn. B <sub>b</sub> P Hn. A Ob. C C Ob. D <sub>b</sub> Vln. F <sub>b</sub> P Vln. F G# is deleted
333	483-485	TT	P2	A, D#, G, C#, F#, B	Fl. F P Fl. F# Vln. C P Vln. B

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
334	486-491	M6	P3	F#, B#, E, A#, D#, G#	Hn. C# P Hn. C Hn. B P Hn. B <sub>b</sub> Vln. G P Vln. A <sub>b</sub> E remains from previous chord
335	492-503	m6	C(B)	D, G#, C, F#, B, E	Ob. C C Ob. B D has no transformation
336	504-505	M7	P1	C#, Fx, B, E#, A#, D#	All scores have C in voice 1, but the chord is clearly C#. Cl. C P Cl. D <sub>b</sub> G remains from previous chords F#, A# & D# have no transformations
337	505b	M6	P2	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Vln. E P Vln. E Vln. C# P Vln Cx A <sub>b</sub> has no transformation
338	506-515	M2	P2, C(B)	C#, Fx, B, E#, A#, D#	Vln. Cx P Vln. D# Hn. F <sub>b</sub> P Hn. F Fl. A# C Fl. B C# has no transformation
339	516-521	m2	P4, C(C)	D, G#, C, F#, B, E	Pno. D# P Pno. E Pno. B C Pno. C Vla. E# P Vla. F# Vc. C# P Vc. D Vc. G P Bsn. G# A# moves to B
340	522-523	M7	P2, S(F#)	C#, Fx, B, E#, A#, D#	Pno. E P Pno. D# Pno. F# S Pno. E# & Pno. Fx A# remains from previous chord Vc. D P Vc. C#
341	523b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
342	524-525	TT	P1, C(B <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Hn. C <sub>b</sub> C Hn. B <sub>b</sub> Pno. E P Pno. D#
343	525b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
344	526	TT	P1, C(B <sub>b</sub> )	C#, Fx, B, E#, A#, D#	Hn. C <sub>b</sub> C Hn. B <sub>b</sub> Pno. E P Pno. D#
345	526b	d7	P2, C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D <sub>b</sub> , G, C	Cl. C <sub>b</sub> P Cl. C Cl. E <sub>b</sub> P Cl. E Cl. G C Cl. A <sub>b</sub>



Chord #	Measure #	Interval	Transformation	MC Notes	Comments
346	527	M3		D, G#, C, F#, B, E	D, F# & B have no transformations
347	528	M7	P4, C(A#)	C#, Fx, B, E#, A#, D#	Bsn. D P Bsn. C# Hn. E P Hn. D# Hn. G# P Hn. Fx Pno. B C Pno. A# Pno. F# P Pno. E#
348	528b	m3	P1, S(Fx)	E, A#, D, G#, C#, F#	Hn. D# P Hn. D Pno. Fx S Pno. G# & Pno. F# E has no transformation
349	529	m2	P4, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Bsn. E P Bsn. F Pno. G# P Pno. A Pno. D C Pno. E <sub>b</sub> Pno. F# P Pno. G Pno. A# P Pno. B C# moves to D
350	529b	m3	P1, S(B)	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Hn. G P Hn. G <sub>b</sub> Pno. B S Pno. B <sub>b</sub> & Pno. C A <sub>b</sub> has no transformation
351	530-531	P4	P3	C#, Fx, B, E#, A#, D#	Pno. C P Pno. B Pno. D P Pno. D# Pno. G <sub>b</sub> P Pno. Fx C# has no transformation
352	531b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
353	532-533	TT	P2	C#, Fx, B, E#, A#, D#	Pno. A P Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub>
354	533b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
355	534	TT	P2	C#, Fx, B, E#, A#, D#	Pno. A P Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub>
356	534b	d7	P2, C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Cl. C <sub>b</sub> P Cl. C Cl. G C Cl. A <sub>b</sub> Cl. E <sub>b</sub> P Cl. E
357	535	M3		D, G#, C, F#, B, E	D, F# & B have no transformations
358	536	M7	P4, C(A#)	C#, Fx, B, E#, A#, D#	Bsn. D P Bsn. C# Hn. E P Hn. D# Hn. G# P Hn. Fx Pno. B C Pno. A# Pno. F# P Pno. E#

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
359	536b	m3	P1, S(Fx)	E, A#, D, G#, C#, F#	Hn. D# P Hn. D Pno. Fx S Pno. G# & Pno. F# E has no transformation
360	537	m2	P4, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Bsn. E P Bsn. F Pno. F# P Pno. G Pno. G# P Pno. A Pno. D C Pno. E <sub>b</sub> Pno. A# P Pno. B C# moves to B
361	537b	M6	P2, C(C)	D, G#, C, <del>F#</del> , B, E	Hn. G P Hn. G# Vln. E <sub>b</sub> P Vln. E Hn. B C Cl. C
362	538	m2	P3, C(D <sub>b</sub> )	E <sub>b</sub> , A, D <sub>b</sub> , <del>G</del> , C, F	Cl. E P Cl. F Cl. C C Cl. D <sub>b</sub> Cl. G# P Cl. A B. Cl. D P B. Cl. E <sub>b</sub>
363	538b	m3	P2	F#, B#, E, A#, D#, G#	Cl. F P Cl. F <sub>b</sub> Cl. A P Cl. A <sub>b</sub> F# & A# have no transformations
364	539	m2	P4, C(F)	G, C#, F, B, E, A	Pno. B <sub>b</sub> P Pno. B Pno. C P Pno. C# Pno. F <sub>b</sub> C Pno. F Pno. A <sub>b</sub> P Pno. A B. Cl. G <sub>b</sub> P B. Cl. G
365	539b	M6	P2, C(D)	E, A#, D, <del>G#</del> , C#, F#	Cl. C# C Cl. D Cl. A P Cl. A# Vln. F P Vln. F#
366	540	m2	P3, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , <del>A</del> , D, G	Hn. F# P Hn. G Hn. A# P Hn. B Hn. D C Hn. E <sub>b</sub> Hn. E P Hn. F
367	540b	m3	P2	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Vln. G P Vln. G <sub>b</sub> Hn. B P Hn. B <sub>b</sub> A <sub>b</sub> & C have no transformations
368	541	m3	S(B <sub>b</sub> ), S(D)	B, E#, A, D#, G#, C#	Hn. B <sub>b</sub> S Hn. A & Hn. B Pno. D S Pno. D# & Pno. C#
369	541b	m3	S(C#), S(E#)	D, G#, C, F#, B, E	Hn./Pno. C# S Pno. C & Hn. D Pno. E# S Pno. F# & Pno. E

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
370	541-543	M7	P2, S(E), C(A#)	C#, Fx, B, E#, A#, D#	Hn./Vln. E S Vln. E# & Cl. E <sub>b</sub> Vc. D P Vla. C# Pno. G# P Cl. G Pno. B C Ob. A#
371	544-549	m2	P4, C(C)	D, G#, C, F#, B, E	Pno. E# P Pno. F# Pno. B C Pno. C Pno. C# P Pno. D Fl. D# P Fl. E Cl. B <sub>b</sub> P Cl. G#
372	550-551	M7	P2, S(F#), C(A#)	C#, Fx, B, E#, A#, D#	Ob. B C Ob. A# Vla. C P Hn. C# Pno. F# S Pno. E# & Pno. Fx Vln. E P Pno. D#
373	551b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
374	552-553	TT	P2	C#, Fx, B, E#, A#, D#	Pno. A P Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub>
375	553b	TT	P2	G, C#, F, B, E, A	Pno. A# P Pno. A Pno. D# P Pno. E
376	554	TT	P2	C#, Fx, B, E#, A#, D#	Pno. A P Pno. B <sub>b</sub> Pno. E P Pno. E <sub>b</sub>
377	544b	d7	P1, C(A <sub>b</sub> )	B <sub>b</sub> , E, A <sub>b</sub> , D <sub>b</sub> , G, C	Vln. B P Vln. C Cl. G C Cl. A <sub>b</sub> E has no transformation
378	555	M3		D, G#, C, F#, B, E	D, F# & B have no transformations
379	556	M7	P4, C(A#)	C#, Fx, B, E#, A#, D#	Bsn. D P Bsn. C# Hn. E P Hn. D# Hn. G# P Hn. Fx Pno. B C Pno. A# Pno. F# P Pno. E#
380	556b	m3	P1, S(Fx)	E, A#, D, G#, C#, F#	Hn. D# P Hn. D Pno. Fx S Pno. G# & Pno. F# E has no transformation
381	557	m2	P4, C(E <sub>b</sub> )	F, B, E <sub>b</sub> , A, D, G	Bsn. E P Bsn. F Hn. F# P Hn. G Hn. A# P Hn. B Hn. D C Hn. E <sub>b</sub> Pno. G# P Pno. A
382	557b	m3	P1, S(B)	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Pno. G P Pno. G <sub>b</sub> Pno. B S Pno. B <sub>b</sub> & Pno. C A <sub>b</sub> has no transformation

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
383	558	M2	P2	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Pno. G <sub>b</sub> P Pno. G Pno. F P Pno. E
384	559	TT	P2	E, A <sub>#</sub> , D, G <sub>#</sub> , C <sub>#</sub> , F <sub>#</sub>	Pno. C P Pno. C <sub>#</sub> Pno. G P Pno. F <sub>#</sub>
385	560-561	M6	P1, S(F <sub>#</sub> )	C <sub>#</sub> , F <sub>x</sub> , B, E <sub>#</sub> , A <sub>#</sub> , D <sub>#</sub>	Hn./Pno. F <sub>#</sub> S Pno. F <sub>x</sub> & Hn. F Cl. D P Cl. D <sub>#</sub> B remains from the previous chord
386	562	M2	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Pno. A <sub>#</sub> P Pno. A Pno. B P Pno. C
387	563	TT	P2	A, D <sub>#</sub> , G, C <sub>#</sub> , F <sub>#</sub> , B	Pno. F P Pno. F <sub>#</sub> Pno. C P Pno. B
388	564-565	M6	P3	F <sub>#</sub> , B <sub>#</sub> , E, A <sub>#</sub> , D <sub>#</sub> , G <sub>#</sub>	Ob. C <sub>#</sub> P Ob. B <sub>#</sub> Hn. B P Hn. B <sub>b</sub> Pno. G P Pno. G <sub>#</sub> E remains from previous chord
389	566	m6	C(B)	D, G <sub>#</sub> , C, F <sub>#</sub> , B, E	Fl. B <sub>#</sub> C Fl. B D has no transformation
390	567	m6	C(G)	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Ob. G <sub>#</sub> C Ob. G B <sub>b</sub> has no transformation
391	568-569	M3	P1, C(B)	D, G <sub>#</sub> , C, F <sub>#</sub> , B, E	Ob. C C Ob. B Ob. G P Ob. F <sub>#</sub>
392	570-573	M7	P1, S(E), C(A <sub>#</sub> )	C <sub>#</sub> , F <sub>x</sub> , B, E <sub>#</sub> , A <sub>#</sub> , D <sub>#</sub>	Ob. B C Ob. A <sub>#</sub> Pno. C P Pno. C <sub>#</sub> Vln. E S Vln. E <sub>#</sub> & Vln. D <sub>#</sub> F <sub>x</sub> has no transformation
393	574	d7	P3	B <sub>b</sub> , E, A <sub>b</sub> , D, G, E	Ob. F P Fl. E Vln. A P Vln. A <sub>b</sub> Vla. D <sub>b</sub> P Vla. D
394	574b	TT	P1, C(C <sub>#</sub> )	E, A <sub>#</sub> , D, G <sub>#</sub> , C <sub>#</sub> , F <sub>#</sub>	Fl. G P Pno. F <sub>#</sub> Pno. D C Pno. C <sub>#</sub>
395	575	M6	P3, C(C <sub>b</sub> )	C <sub>#</sub> , F <sub>x</sub> , B, E <sub>#</sub> , A <sub>#</sub> , D <sub>#</sub>	Fl. G <sub>#</sub> P Fl. G Hn. F <sub>#</sub> P Hn. E <sub>#</sub> Pno. D P Pno. D <sub>#</sub> Ob. A <sub>#</sub> C Ob. C <sub>b</sub> E deleted
396	576	M2	P2	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Fl. C <sub>b</sub> P Fl. C Fl. A <sub>#</sub> P Fl. A
397	576b	TT	P1, C(F <sub>#</sub> )	A, D <sub>#</sub> , G, C <sub>#</sub> , F <sub>#</sub> , B	Pno. G C Pno. F <sub>#</sub> Fl. C P Ob. B

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
398	577	M6	P3	F#, B#, E, A#, D#, G#	Fl. C# P Fl. B# Ob. G P Ob. G# Hn. B P Hn. B, E remains from previous chord
399	578	M7	P4	F, B, E <sub>b</sub> , A, <del>D</del> , G	Vc. F# P Vc. F Vc. B# P Vc. B Vla. A# P Vla. A Pno. G# P Pno. G
400	579	m2	P3, S(E <sub>b</sub> )	E, A#, D, G#, <del>C#</del> , F#	Fl. B P Fl. A# Ob. G P Ob. F# Hn. A P Hn. G# Hn./Cl. E <sub>b</sub> S Cl. E & Hn. D
401	580	M7	P3, S(F#)	E <sub>b</sub> , A, D <sub>b</sub> , G, C, F	Picc. A# P Picc. A Fl. D P Fl. D, Pno./Ob. F# S Ob. G & Pno. F Vc. E P Vc. E <sub>b</sub> C has no transformation
402	581	M7	P3	D, G#, C, F#, <del>B</del> , E	Fl. A P Fl. G# Cl. F P Cl. F# Vc. E <sub>b</sub> P Vc. D E has no transformation
403	581b	m6	C(G)	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Fl. G# C Fl. G B <sub>b</sub> has no transformation
404	582	m3	P1, C(B)	D, G#, C, F#, B, E	Ob. C C Ob. B Pno. G P Vln. F#
405	583	M7	P1, S(E), C(A#)	C#, Fx, B, E#, A#, D#	Ob. B C Ob. A# Pno. C P Pno. C# Vln./Cl. E S Cl. E <sub>b</sub> & Vln. E# G remains from previous chord
406	584	P5	S(C#), S(Fx)	A <sub>b</sub> , D, G <sub>b</sub> , C, F, B <sub>b</sub>	Vc./Bsn. C# S Bsn. D & Vc. C Bsn. Fx S Bsn. A <sub>b</sub> & Bsn. G <sub>b</sub>
407	585	TT		D, G#, C, F#, <del>B</del> , E	E has not transformation
408	585b	m6	C(G)	B <sub>b</sub> , E, A <sub>b</sub> , D, G, C	Picc. G# C Picc. G B <sub>b</sub> has no transformation
409	586	M3	C(B)	D, G#, C, F#, B, E	Ob. C C Ob. B F# has no transformation
410	587	M7	P1, S(E)	C#, Fx, B, E#, A#, D#	Vln./Cl. E S Cl. E <sub>b</sub> & Vln. E# Pno. C P Pno. C# G & A# remain from

Chord #	Measure #	Interval	Transformation	MC Notes	Comments
					previous chord
411	588	P5	S(C#), S(Fx)	A $\flat$ , D, G $\flat$ , C, F, B $\flat$	Vc./Bsn. C# S Bsn. D & Vc. C Bsn. Fx S Bsn. A $\flat$ & Bsn. G $\flat$
412	589	P4	P2, S(Fx), C(B)	C#, Fx, B, E#, A#, D#	w/o Luce Bsn. A $\flat$ & Bsn. G $\flat$ S Bsn. Fx Ob. D P Ob. D# Vc. C P Vc. C# Vln. B $\flat$ C Vln. B
413	590-601	P6	S(Fx), S(C#)	A $\flat$ , D, G $\flat$ , C, F, B $\flat$	Bsn. Fx S Bsn. A $\flat$ & Bsn. G $\flat$ Vc. C# S Vc. C & Vc. D
414	602-606	m7	P1	F# Major	Fl. F P Fl. F#

APPENDIX B

VOICE LEADING DIAGRAMS

Diagram 1 (mm. 1-86)

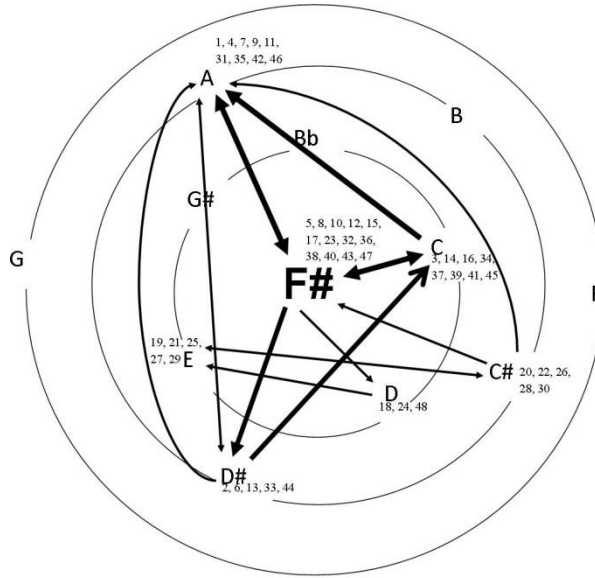
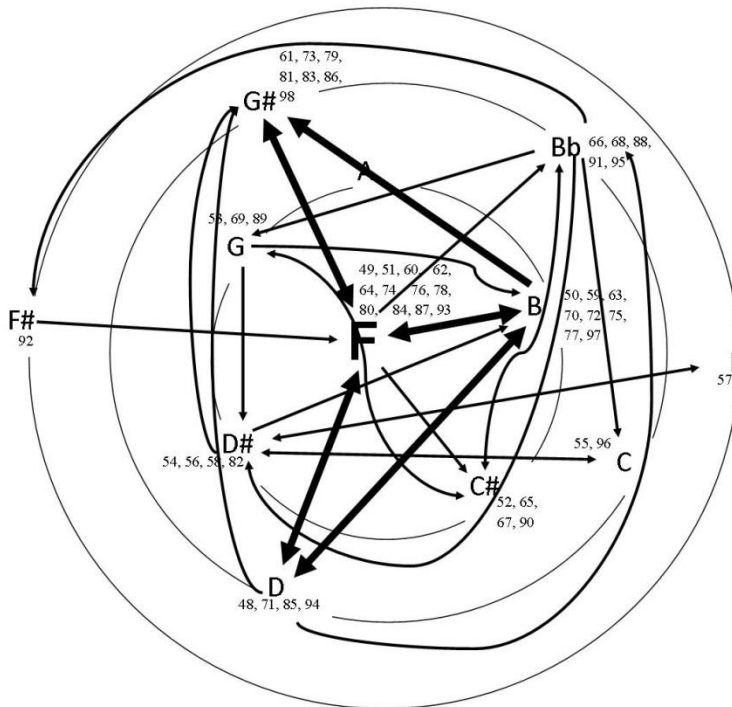
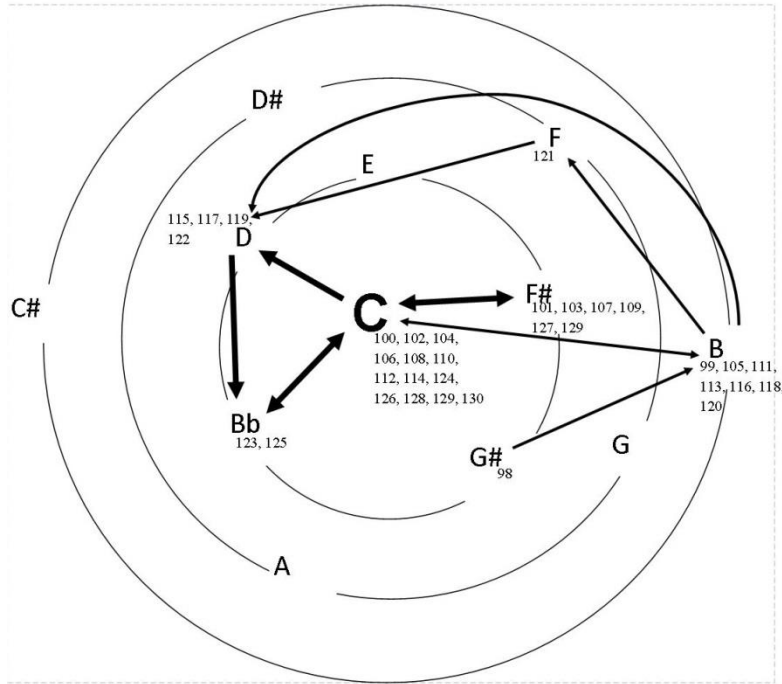


Diagram 2 (mm. 87-148)



**Diagram 3 (mm. 149-201)**



**Diagram 4 (mm. 202-211)**

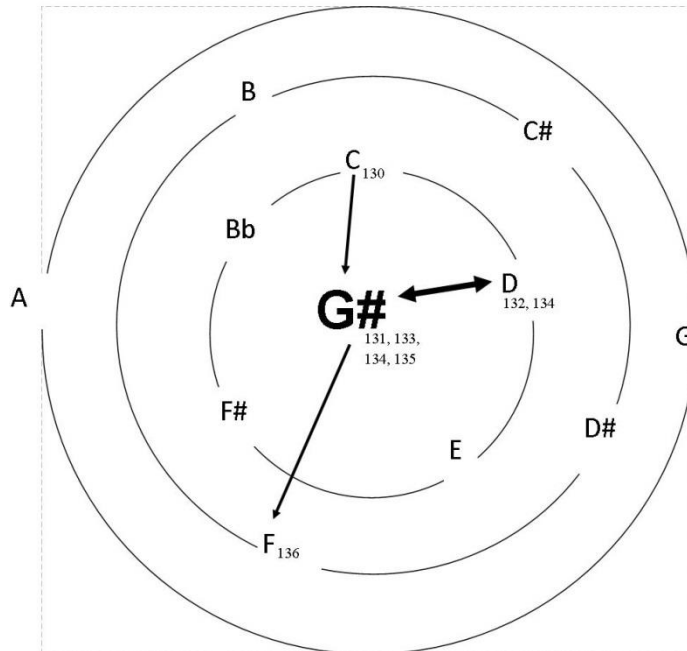




Diagram 5 (mm. 212-219)

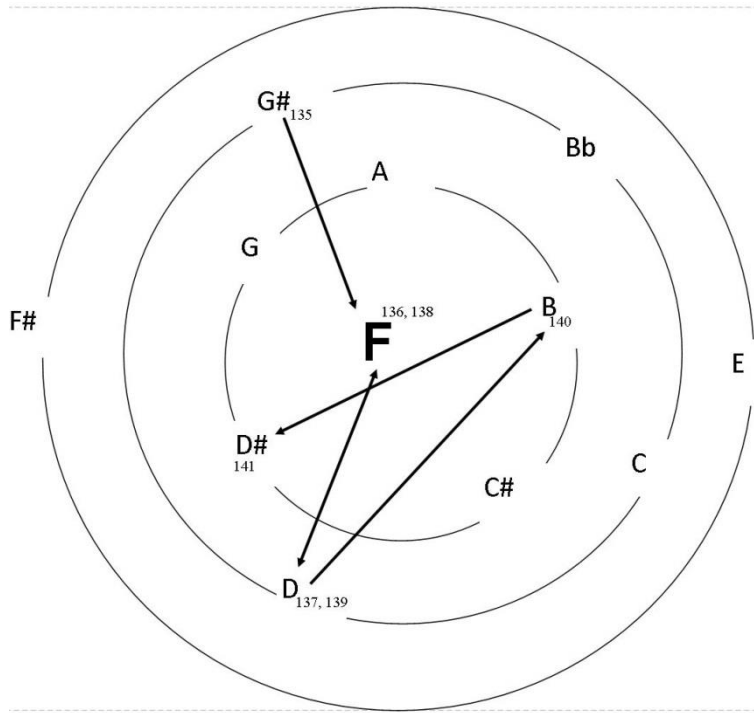


Diagram 6 (mm. 220-228)

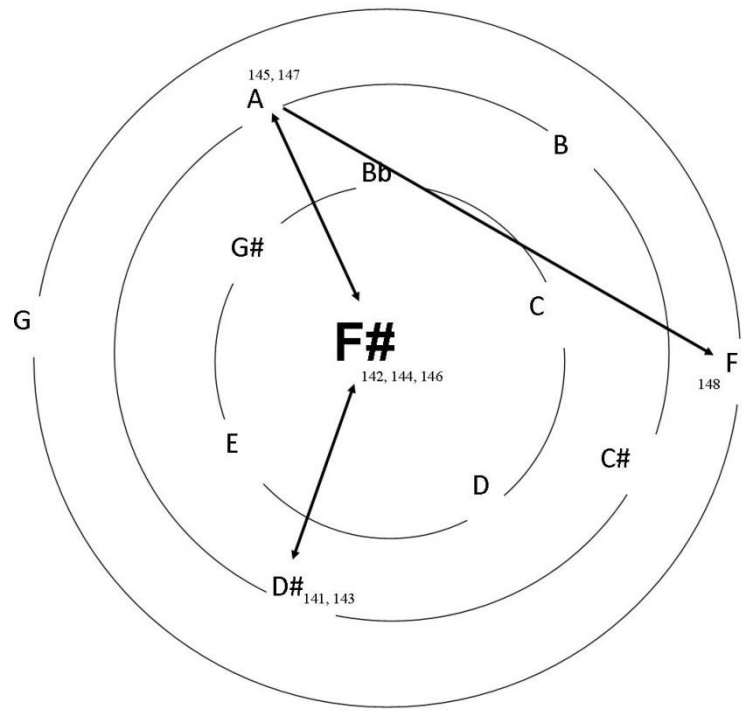


Diagram 7 (mm. 229-240)

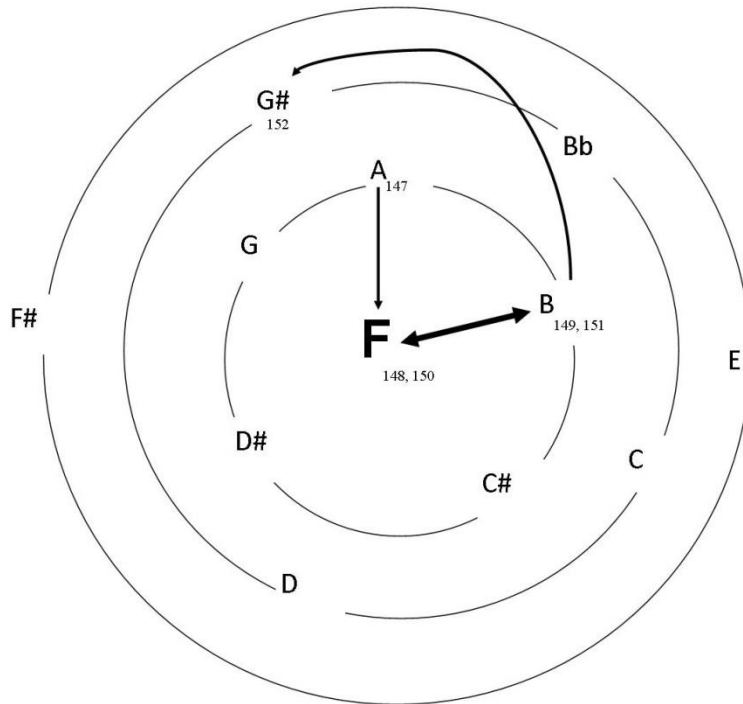
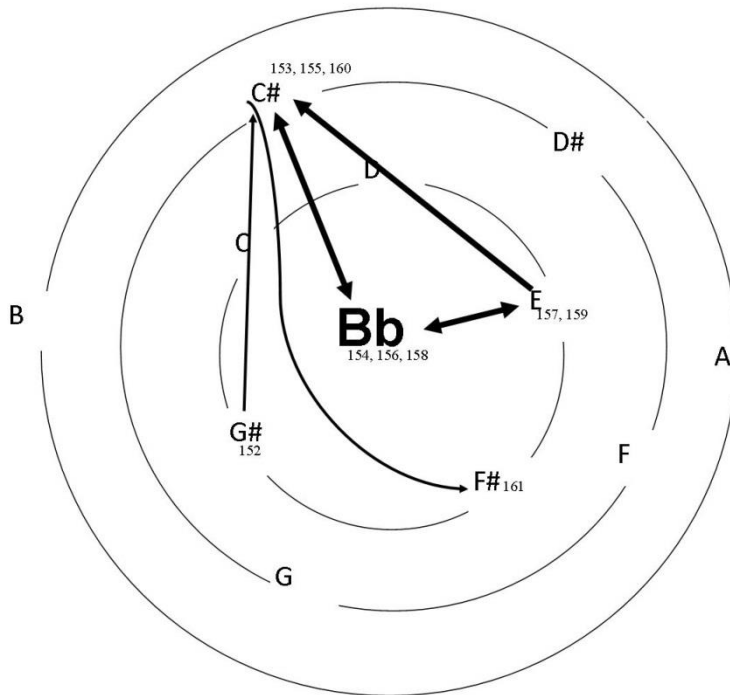
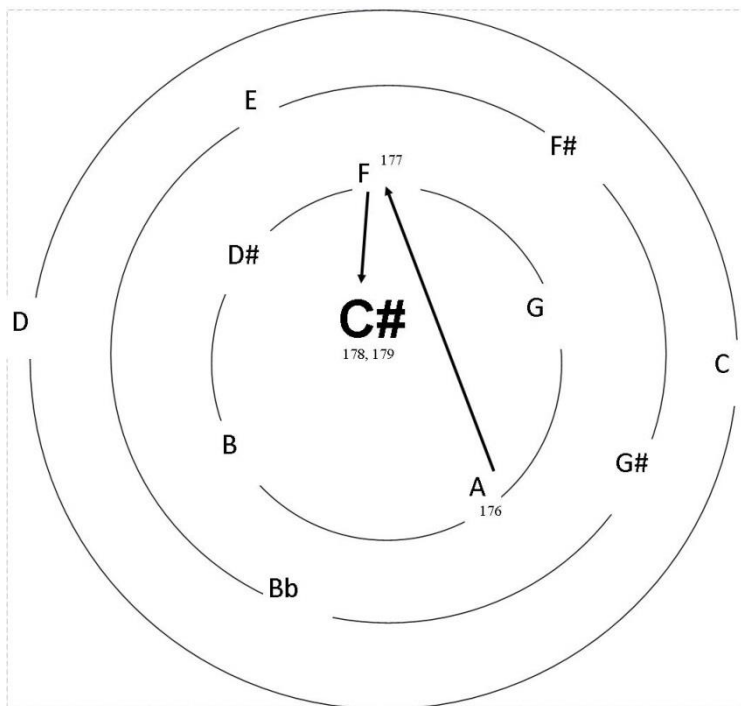


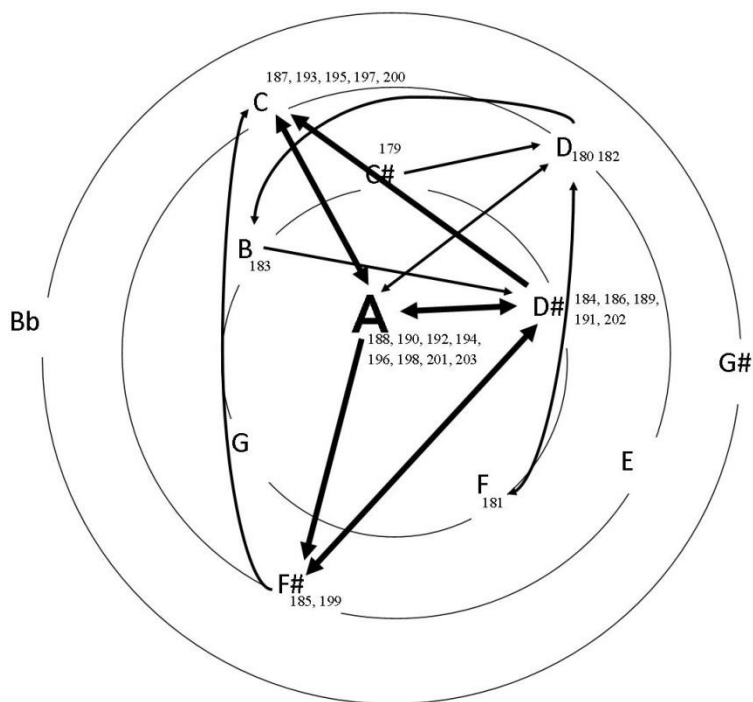
Diagram 8 (mm. 241-260)



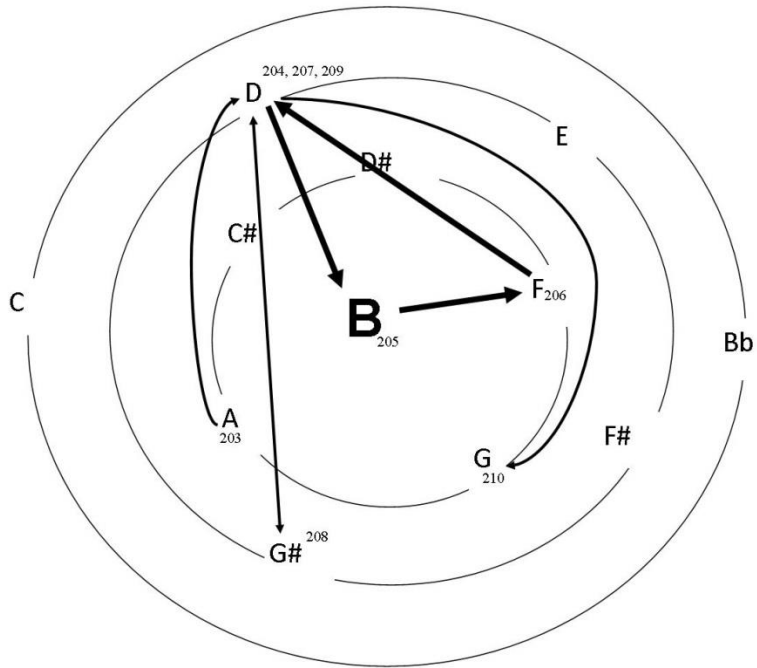
**Diagram 9 (mm. 301-308)**



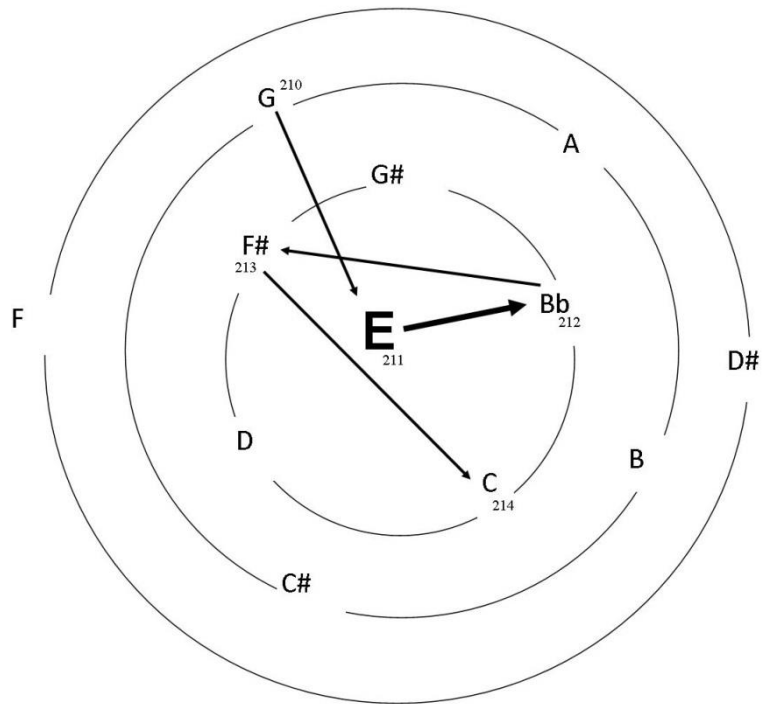
**Diagram 10 (mm. 309-328c)**



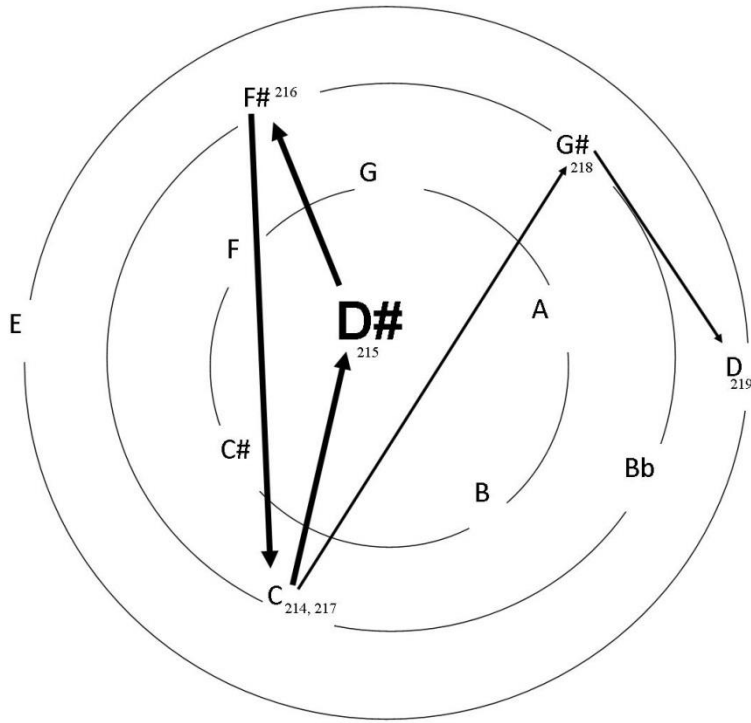
**Diagram 11 (mm. 328d-336)**



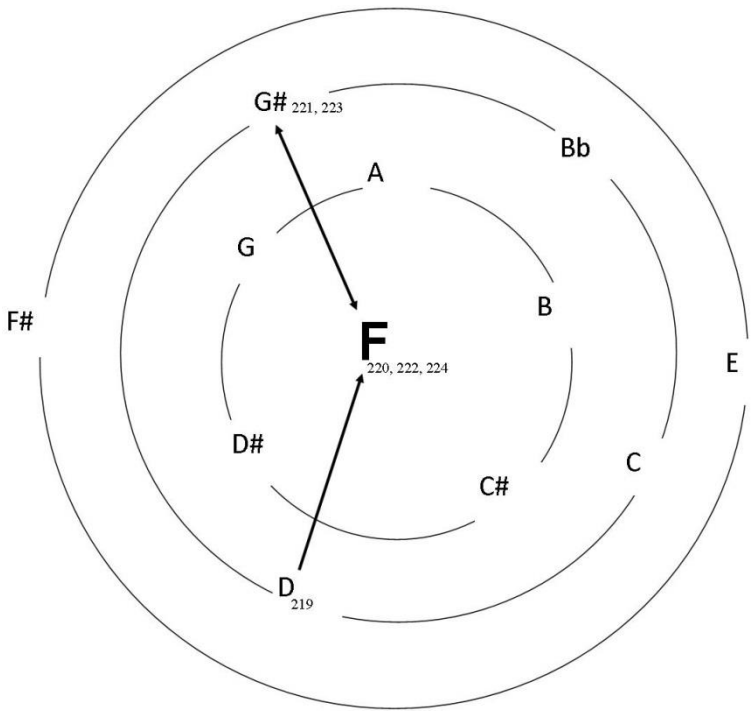
**Diagram 12 (mm. 337-344)**



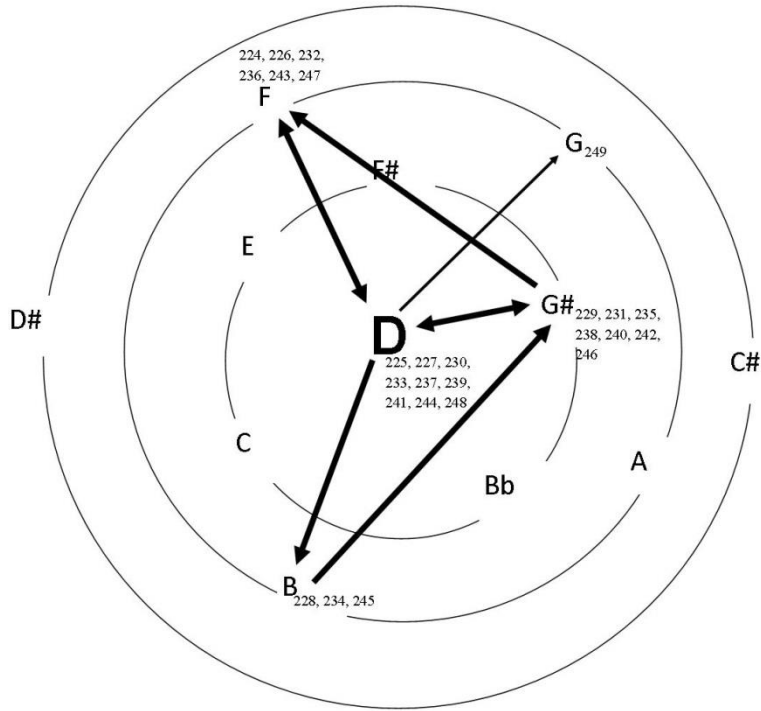
**Diagram 13 (mm. 345-354)**



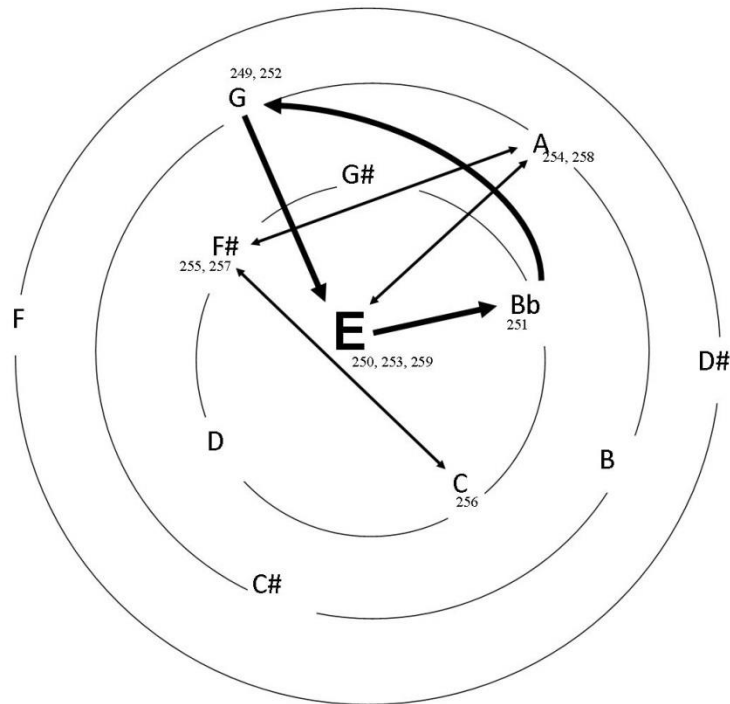
**Diagram 14 (mm. 355-370)**



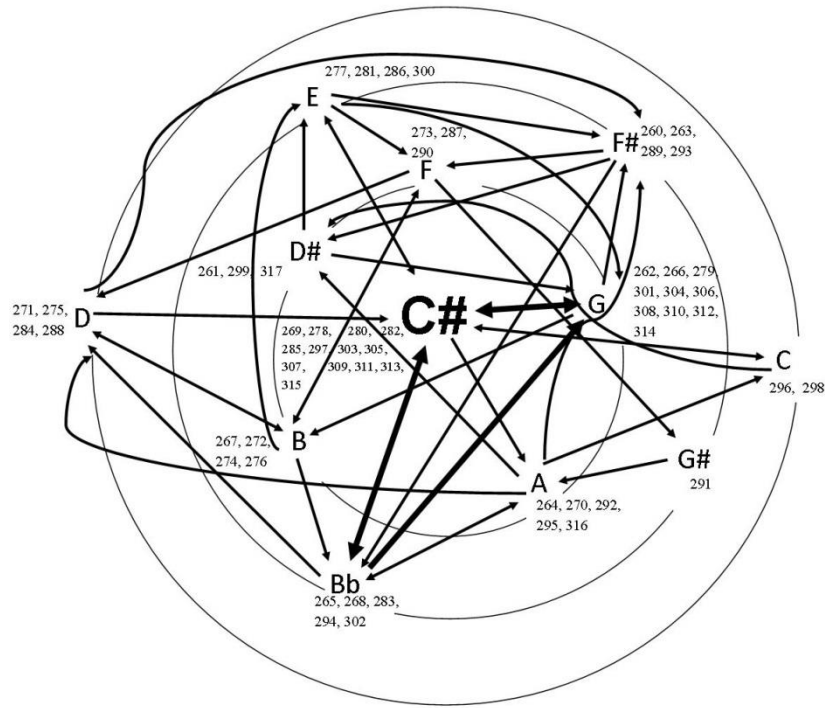
**Diagram 15 (mm. 371-408)**



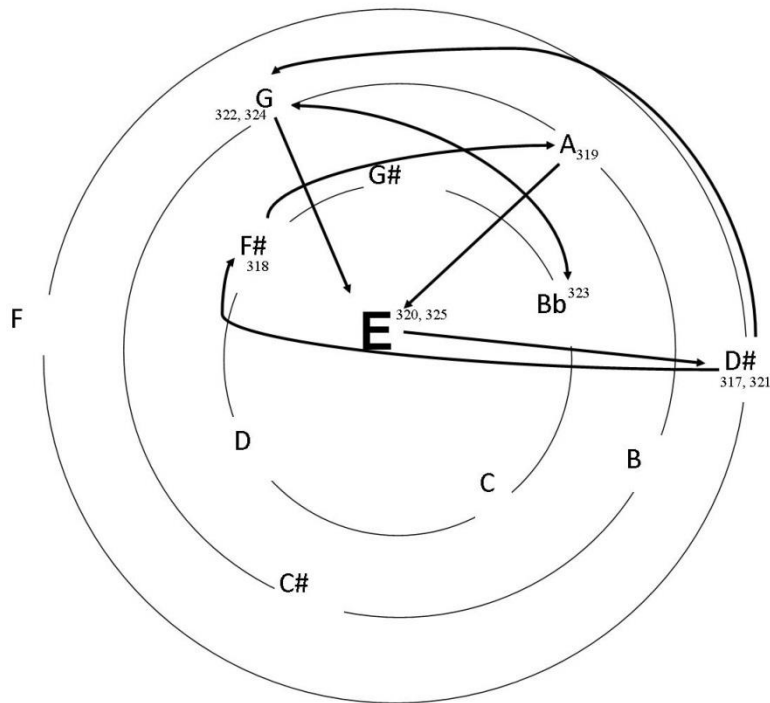
**Diagram 16 (mm. 409-415)**



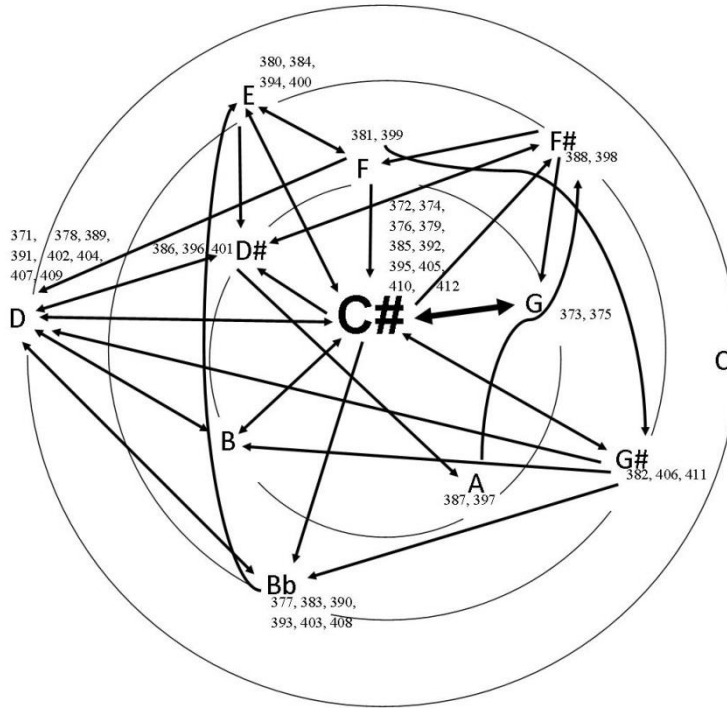
**Diagram 17 (mm. 415b-450)**



**Diagram 18 (mm. 451-458)**



**Diagram 19 (mm. 549-589)**





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